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Theoretical Thermodynamic Properties of Gases at High Temperatures and Densities with Numerical Results for Hydrogen

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ABSTRACT

The partition function corresponding to an equation of state for a high-temperature, high-density gas suggested by J. S. Rowlinson has been derived. The equations for selected thermodynamic properties of the gas are obtained from this partition function using statistical thermodynamics. These equations are used to calculate results for the case of hydrogen in the range of temperature between 500°K and 3000°K and in the range of density between 1 and 2000 amagats.

PROBLEM STATUS

This is an interim report; work on the problem is continuing.

AUTHORIZATION

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THEORETICAL THERMODYNAMIC PROPERTIES OF GASES AT HIGH TEMPERATURES AND DENSITIES WITH NUMERICAL RESULTS FOR HYDROGEN

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INTRODUCTION

An equation of state for high-temperature, high-density gases has been suggested by Rowlinson (1). The partition function corresponding to this equation has been derived, from which has been calculated the hydrogen-gas properties reported here. The significance of this equation of state is that it accounts for the temperature and density dependence of (a) the two-body, intermolecular forces and (b) the volume occupied by the molecules.

An equation of state which includes these effects can be derived in principle from either of two thermodynamic relationships. One, which will be referred to as the pressure equation, comes from the fact that the internal energy of a gas is composed of two parts. The first part is associated with the kinetic energy which is independent of intermolecular forces and corresponds to the ideal gas term. The second part is associated with the intermolecular forces and depends on the radial distribution function of the gas molecules $g(r)$ and the molecular potential $\varphi(r)$ or intermolecular forces $-d\varphi(r)/dr$. This pressure equation is (2)

$$Pv^{\ddagger} = RT - \frac{N_0^2}{6v}\int_0^\infty g(r)\,\frac{d\varphi(r)}{dr}\,4\pi r^3\,dr\ . \tag{1}$$

where N_0 is Avogadro's number.

The second relationship from which one can obtain an equation of state for a real gas was developed by Ornstein and Zernike (3) and will be referred to as the compressibility equation:

$$-\frac{RT}{v^2}\left(\frac{\partial v}{\partial P}\right) = 1 + \frac{N_0}{v}\int_0^\infty [g(r) - 1]\,4\pi r^3\,dr\ . \tag{2}$$

Both equations make the assumptions that (a) all intermolecular forces are two-body forces only, (b) the intermolecular potential is spherically symmetric and, therefore, only a function of radial distance, and (c) classical mechanics applies. The radial distribution function, if correct, should yield the same result from both Eqs. (1) and (2). This agreement has not been possible to achieve, because an exact solution requires the consideration of three-body interactions. Percus and Yevick (4) have suggested an approximation in which three-body interactions are taken in pairs. Using the Percus-Yevick equation, Thiele (5) has obtained, from Eqs. (1) and (2), respectively, the following two equations of state for a gas of hard spheres, i.e., molecules with a square-well potential:

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‡The lower case symbols u, s, h, c_v, c_p, and v are quantities per unit mole.

$$\frac{Pv}{RT} = \frac{1 + 2\xi_m + 3\xi_m^2}{(1 - \xi_m)^2} \tag{3}$$

and

$$\frac{Pv}{RT} = \frac{1 + \xi_m + \xi_m^2}{(1 - \xi_m)^3} \,. \tag{4}$$

where $\xi_m = b_m/4v$, in which $b_m = (2/3)\pi N_0 r_m^3$, is related to the volume occupied by the molecules, with r_m being the molecular radius. Thiele observes that Eq. (4) gives a somewhat better result than Eq. (3). The "exact," machine-calculated results lie between the two. Both equations fail near the density of close packing, since no phase transition is predicted.

Rowlinson has extended Thiele's work to the case of a compressible molecule by replacing the square-well potential with the Lennard-Jones $(n/2, n)$ potential:

$$\varphi(r) = \epsilon\left[\left(\frac{r_m}{r}\right)^n - 2\left(\frac{r_m}{r}\right)^{n/2}\right] , \tag{5}$$

where $-\epsilon$ is the minimum value of φ at $r = r_m$. Rowlinson chooses to solve Eq. (2), since according to Thiele it leads to better results than Eq. (1), by equating the integrals with the square-well potential to those with the Lennard-Jones potential on the assumption that the temperature is sufficiently high, i.e., $T > 12\epsilon/k$. The equations will then define σ_κ, the equivalent nondimensionalized, hard-sphere radius, and will have the form

$$\int_0^{\sigma_\kappa} (-1)\rho^{\kappa-1}\, d\rho = \int_0^\infty \left[e^{-\varphi(\rho)/kT} - 1\right] \rho^{\kappa-1}\, d\rho \,, \tag{6}$$

where $\rho = r/r_m$ and κ is an exponent in the range $0 < \kappa < n/2$. Rowlinson has shown that if a suitable expansion of the right side of Eq. (6) is made with the variable $x = \epsilon/kT$ and if terms greater than the order $1/n$ are neglected, then σ_κ is independent of κ and is given by

$$\sigma = \frac{r}{r_m} = x^{1/n}\left[1 + \frac{1}{n} F(x)\right] , \tag{7}$$

where

$$F(x) = \gamma_e - 2\sqrt{\pi x} \sum_{l=0}^{\infty} \frac{x^l}{(2l+1)\, l!} - \sum_{m=1}^{\infty} \frac{(m-1)!\, 2^{2m} x^m}{(2m)!} \tag{8}$$

in which γ_e is Euler's constant. The fixed radius of a rigid sphere can now be replaced by the variable radius $r = r_m\sigma$, so that b can be substituted for b_m and ξ for ξ_m; therefore,

$$\xi = \frac{b}{4v} = \frac{1}{4v}\left(\frac{2}{3}\pi N_0 r^3\right) = \frac{1}{4v}\left(\frac{2}{3}\pi N_0 r_m^3 \sigma^3\right) .$$

Since $(2/3)\pi N_0 r_m^3 = b_m$ and using Eq. (7) to eliminate σ, then

$$\xi = \frac{b_m}{4v} x^{3/n}\left[1 + \frac{1}{n}F(x)\right]^3. \tag{9}$$

The equation of state is given either by Eq. (3) or (4) with ξ_m replaced by ξ.

Choosing n as 12 gives the usual Lennard-Jones [6, 12] potential and

$$\xi = \frac{b_m}{4v} x^{1/4}\left[1 + \frac{1}{12}F(x)\right]^3. \tag{10}$$

By specifying the equation of state of a gas, the various thermodynamic properties are specified. Commonly used thermodynamic relationships involve the derivatives of these properties with respect to the state variables (P, v, T), however, and must therefore be integrated. For an equation of state such as Eq. (3) or (4), these integrals would be difficult or even impossible to solve analytically.

A more satisfactory approach was found through the use of statistical thermodynamics which related all properties, including the equation of state, to derivatives of a total partition function Q. The relationship for the equation of state is

$$\frac{Pv}{RT} = v\left(\frac{\partial}{\partial v} \ln Q\right)_{T,N_0}. \tag{11}$$

By substituting either Eq. (3) or (4) for Pv/RT, Eq. (11) can be integrated to yield an analytic expression for those terms of the partition function which depend on v. From this result, the contribution of the intermolecular forces to the thermodynamic properties of interest can be determined (see Appendix A).

THE PARTITION FUNCTION

The total partition function is composed of factors, each of which is associated with a particular type of energy of the gas molecule. To construct the total partition function, the appropriate component partition functions corresponding to independent energy modes are simply multiplied together. In this way the equations are easily altered for different types of molecules (e.g., monatomic and diatomic) or to account for phenomena at different energies of interest (e.g., rotation-vibration or electronic excitations). For a diatomic gas between 500°K and 3000°K and between 1 amagat and 2000 amagats, the total partition function is composed of the following energy-related factors (dissociation and ionization are considered to be negligible in this range):

translational:

$$Q_t = \frac{v}{h^3}(2\pi mkT)^{3/2} \tag{12}$$

potential:

$$Q_p = (1-\xi)e^{-3\xi(2-\xi)/2(1-\xi)^2} \tag{13}$$

rotational - vibrational:

$$Q_{rv} = \sum_{n=0}^{n_{max}} \left(\sum_{\substack{j \\ (\text{even})}} (2j+1)\, e^{-\epsilon_{jn}/kT} + 3 \sum_{\substack{j \\ (\text{odd})}} (2j+1)\, e^{-\epsilon_{jk}/kT} \right) \tag{14}$$

where Q_t is the usual partition-function term for an ideal gas; Q_p is the factor due to the intermolecular forces as obtained by integrating Eq. (11), with Eq. (4) as the equation of state, i.e., for $Pv/RT = (1 + \xi + \xi^2)/(1 - \xi)^3$; Q_{rv} is the standard quantum mechanical term for rotation-vibration effects including that of para-hydrogen and ortho-hydrogen; ϵ_{jn} is the energy level of the molecule and includes both anharmonicity in the vibration and rotation-vibration interaction; ϵ_{jn}/k is given by

$$\left(n + \frac{1}{2}\right) \left\{1 - \left(n + \frac{1}{2}\right) \left[x_e - \left(n + \frac{1}{2}\right) y_e\right]\right\} \theta_{v_e} - \left(n + \frac{1}{2}\right) j(j+1) \alpha_e'$$

$$+ (j+1) [B_e' - (j+1)(D_e' - (j+1) H_e)] .$$

where θ_{v_e}, α_e', B_e', D_e', and H_e' are the usual constants characteristic of the gas multiplied by hc/k; and n_{max} is the quantum number of the maximum vibrational energy level due to dissociation. The total partition function for N_0 in distinguishable particles is $Q_{tot} = Q^{N_0}/N_0!$ where $Q = Q_t Q_p Q_{rv}$.

THERMODYNAMIC FUNCTIONS

Having specified the total partition function, it is now possible to obtain any thermodynamic function using fundamental statistical thermodynamic relationships. Those functions of particular interest are the compressibility, the specific internal energy, the specific enthalpy, the specific entropy, the specific heat capacities at constant volume and pressure, and the sound speed. They are given, respectively, by the following equations:

$$\frac{Pv}{RT} = v \left(\frac{\partial}{\partial v} \ln Q\right)_T = Z . \tag{15}$$

$$\frac{u}{RT} = \left(\frac{\partial \ln Q}{\partial \ln T}\right)_v = \frac{3}{2} + \phi(Z - 1) + DQ_{rv} . \tag{16}$$

$$\frac{h}{RT} = \frac{u}{RT} + \frac{Pv}{RT} = \frac{u}{RT} + Z . \tag{17}$$

$$\frac{s}{R} = \frac{u}{RT} + \ln \frac{Q}{N_0} + 1. \tag{18}$$

$$\frac{c_v}{R} = \frac{1}{R} \left(\frac{\partial u}{\partial T}\right)_v = \frac{3}{2} + \phi(Z - 1) \left(1 + D\phi - \frac{\phi ZZ'}{Z - 1}\right) - DQ_{rv} (2 - DQ_{rv}) + D^2 Q_{rv} . \tag{19}$$

$$\frac{c_p}{R} = \frac{c_v}{R} + \frac{1}{R} \left[P + \left(\frac{\partial u}{\partial v}\right)_T\right] \left(\frac{\partial v}{\partial T}\right)_p = \frac{c_v}{R} + \frac{Z(1 - \phi Z')^2}{(1 + Z')} . \tag{20}$$

$$a^2 = - \frac{v^2}{m} \left(\frac{\partial P}{\partial v}\right)_s = -\gamma \frac{v^2}{m} \left(\frac{\partial P}{\partial v}\right)_T = Z(1 + Z') \left(\frac{\gamma RT}{m}\right) . \tag{21}$$

where

$$\phi = \frac{1}{4} \left[1 + \frac{x}{\left(1 + \frac{F}{12}\right)} \frac{dF}{dx}\right]. \tag{22}$$

$$Z' = \frac{\xi}{Z}\left(\frac{dZ}{d\xi}\right). \tag{23}$$

and D and D^2 are operators defined by

$$Df = \frac{T}{f}\left(\frac{df}{dT}\right) \text{ and } D^2 f = \frac{T^2}{f}\left(\frac{d^2 f}{dT^2}\right). \tag{24}$$

HYDROGEN PROPERTIES

The following properties of hydrogen gas, using Eq. (4) for the equation of state as suggested by Rowlinson, have been evaluated as a function of density ($1 \le \rho \le 2000$ amagats) and temperature (500°K $\le T \le$ 3000°K): pressure P, compressibility Z, specific heat capacities at constant volume c_v and constant pressure c_p, sound speed a, specific internal energy u, specific enthalpy h, and specific entropy s. The latter three quantities are presented as relative to their values at $\rho = 1$ amagat and $T = 273.16$°K, which are denoted as u_0, h_0, and s_0, respectively.

The upper limit on density has been selected so as not to approach too closely the close-packing density given by $\xi_{max} = \pi\sqrt{2}/6 = 0.74$ (Ref. 5). For 500°K $\le T \le$ 3000°K, this would mean that $3300 \le \rho_{max} \le 4300$ amagats. The upper limit on temperature has been selected so as to avoid any significant molecular dissociation, and the lower limit on temperature is set by the approximation in the theory that $T > n\epsilon/k \approx 450$°K. Table 1 is a listing of the constants used in the calculations and their sources. The properties of hydrogen are presented in Tables 2 and 3. The temperature and density intervals in these two tables have been chosen so that the error using linear interpolation will be less than 0.1% in almost all cases, with the exception of relative entropy in the vicinity of zero.

A comparison of these results (6) with other published equation of state data for hydrogen (7), (8), (9) shows close agreement. Divergences appear only at the higher end of the density range. For the purpose of this comparison, a value of $S_0/R = 16.866$ from Ref. 7 was used with Ref. 9 and a value of $S_0/R = 15.402$ was used with Ref. 8.

Table 4 gives a breakdown of the contribution to u, h, s, c_v, and c_p from each of the three factors in the partition function. In particular the contribution from the intermolecular potential shows the extent of the deviation from an ideal gas.

Selected graphs of the data from Tables 2 and 3 are presented in Figs. 1 through 7 and in Appendix B. The constant entropy data was calculated using Eq. (18) from which the entropy s_1 for any gas state may be calculated. Any other state s_2 with the same entropy may be obtained by specifying one of the state variables and iterating Eq. (18) for the other state variable until $s_1 = s_2$.

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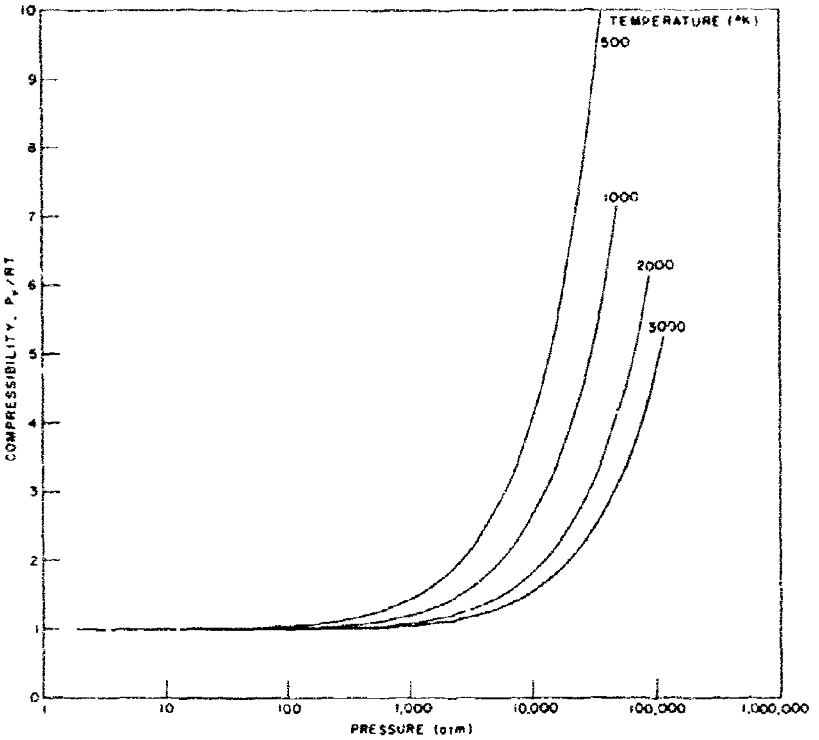

Fig. 1 - Compressibility vs pressure for constant temperature

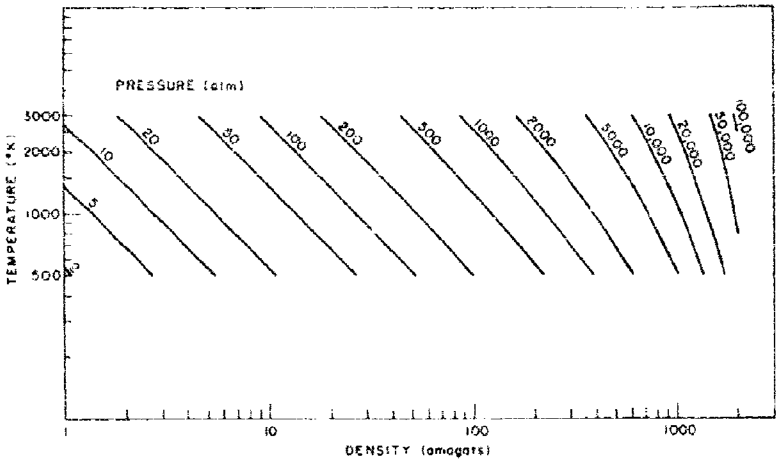

Fig. 2 - Temperature vs density for constant pressure

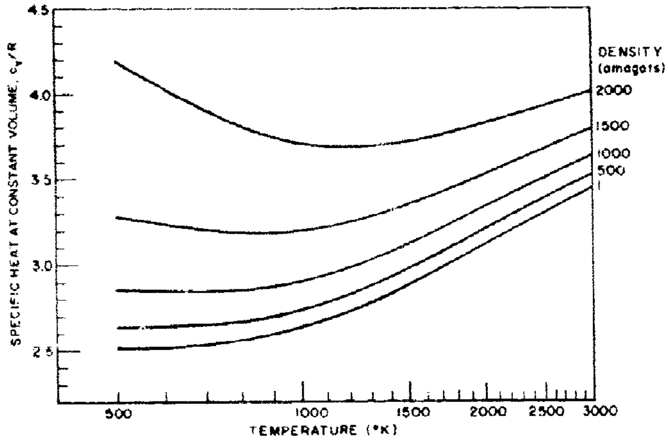

Fig. 3 - Specific heat at constant volume vs temperature for constant density

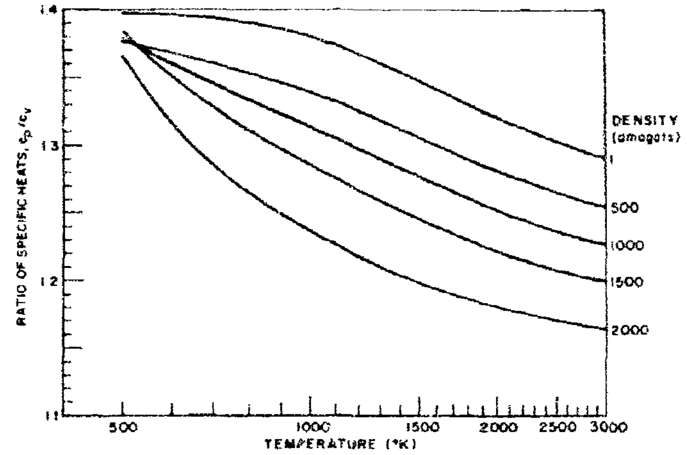

Fig. 4 - Ratio of specific heats vs temperature for constant density

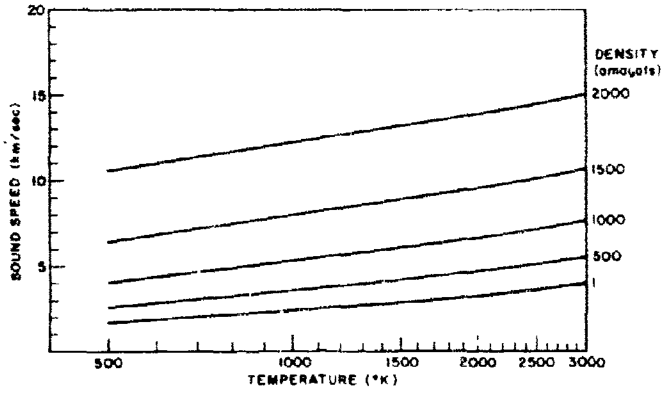

Fig. 5 - Sound speed vs temperature for constant density

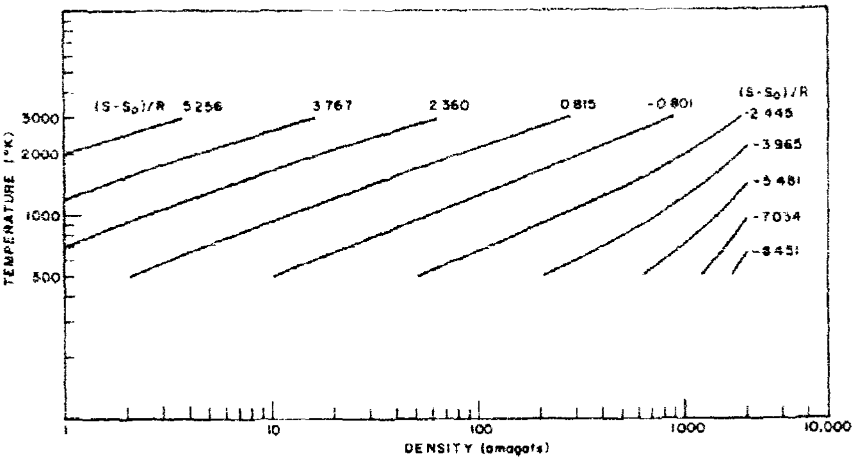

Fig. 6 - Temperature vs density for constant entropy

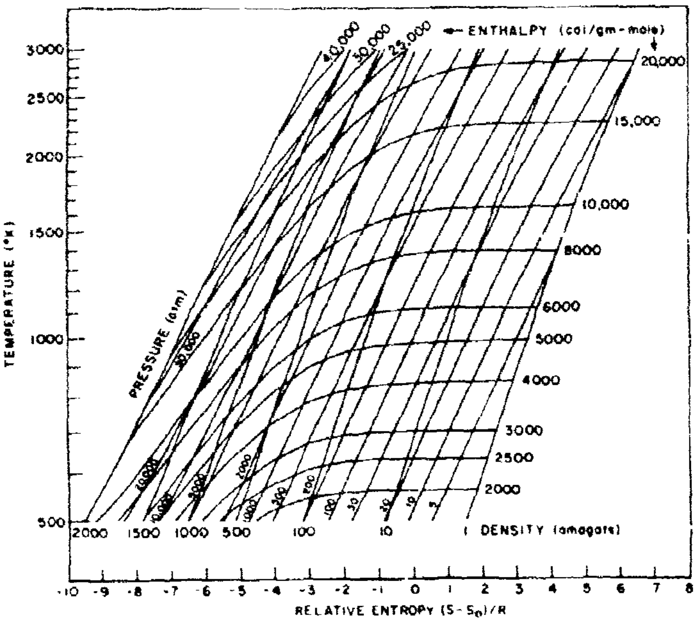

Fig. 7 - Temperature vs relative entropy for constant pressure, density, and enthalpy

Table 1
Hydrogen Constants

Constant	Value	Ref.	Page
R	0.8317 × 10^{-2} joules/°K/kg-mole or 1.9869 cal/°K/g-mole	10	3437
m	2.016 kg/kg-mole	10	582
N_0	6.0248 × 10^{23} /mole	10	3437
r_0	2.928 × 10^{-8} cm	11	1110
$r_m = 2^{1/6} r_0$	3.287 × 10^{-8} cm	—	—
$b_m = (2/3) \pi N_0 r_m^3$	44.795 cm^3	—	—
ϵ / k	37°K	11	1110
γ_e	0.577215665	10	12
θ_{ve}	6315.5°K	12	468
α_e	3.0664/cm	14	352
B_e	60.848/cm	14	352
D_e	0.04644/cm	14	352
H_e	0.0000497/cm	13	109
$\alpha_e' = hc\alpha_e/k$	4.411°K	—	—
$B_e' = hcB_e/k$	87.54°K	—	—
$D_e' = hcD_e/k$	0.06681°K	—	—
$H_e' = hcH_e/k$	0.0000715°K	—	—
$n_{\max}$	14	—	—
x_e	0.02603	12	468
y_e	0.0000667	13	532
hc/k	1.4388 cm-°K	10	3437

Table 2
Selected Properties of Hydrogen

TEMPERATURE (DEGREES K)		DENSITY (AMAGAT)									
		1.	10.	20.	30.	40.	50.	100.	150.	200.	250.
500.	P(ATM)	1.8320	18.459	37.254	56.390	75.873	95.709	200.40	314.86	439.96	576.64
	Z	1.0009	1.0091	1.0189	1.0275	1.0369	1.0464	1.0955	1.1474	1.2025	1.2609
	CV/R	2.5106	2.5212	2.5231	2.5240	2.5268	2.5287	2.5384	2.5487	2.5596	2.5712
	CP/R	3.5105	3.5200	3.5209	3.5212	3.5220	3.5228	3.5279	3.5349	3.5437	3.5543
	CP/CV	1.3968	1.3961	1.3953	1.3946	1.3939	1.3931	1.3898	1.3869	1.3845	1.3824
	A(KPS)	1.6967	1.7121	1.7271	1.7422	1.7575	1.7729	1.8518	1.9341	2.0200	2.1097
600.	P(ATM)	2.1972	22.148	44.099	67.648	90.997	114.77	240.14	377.02	526.43	689.46
	Z	1.0009	1.0089	1.0180	1.0271	1.0363	1.0456	1.0939	1.1450	1.1990	1.2563
	CV/R	2.5277	2.5293	2.5310	2.5328	2.5347	2.5365	2.5466	2.5568	2.5665	2.5777
	CP/R	3.5275	3.5276	3.5278	3.5280	3.5283	3.5287	3.5316	3.5363	3.5426	3.5505
	CP/CV	1.3956	1.3947	1.3938	1.3929	1.3920	1.3912	1.3871	1.3835	1.3803	1.3774
	A(KPS)	1.8680	1.8743	1.8904	1.9066	1.9229	1.9394	2.0238	2.1118	2.2035	2.2991
700.	P(ATM)	2.5633	25.756	52.126	78.880	106.10	133.80	279.76	438.01	612.37	801.39
	Z	1.0009	1.0088	1.0177	1.0266	1.0357	1.0449	1.0924	1.1425	1.1955	1.2517
	CV/R	2.5414	2.5429	2.5446	2.5464	2.5482	2.5500	2.5592	2.5689	2.5792	2.5899
	CP/R	3.5412	3.5410	3.5409	3.5408	3.5408	3.5409	3.5422	3.5451	3.5496	3.5557
	CP/CV	1.3934	1.3925	1.3915	1.3905	1.3895	1.3886	1.3841	1.3800	1.3763	1.3729
	A(KPS)	2.0074	2.0226	2.0396	2.0567	2.0740	2.0914	2.1805	2.2733	2.3700	2.4707
800.	P(ATM)	2.9285	29.523	59.559	90.111	121.19	152.01	319.28	500.55	697.87	912.60
	Z	1.0009	1.0086	1.0174	1.0262	1.0352	1.0442	1.0908	1.1401	1.1922	1.2472
	CV/R	2.5634	2.5649	2.5666	2.5683	2.5700	2.5718	2.5808	2.5903	2.6002	2.6107
	CP/R	3.5631	3.5628	3.5624	3.5621	3.5619	3.5618	3.5619	3.5636	3.5667	3.5713
	CP/CV	1.3900	1.3891	1.3880	1.3870	1.3860	1.3849	1.3802	1.3758	1.3717	1.3679
	A(KPS)	2.1434	2.1593	2.1771	2.1950	2.2131	2.2313	2.3246	2.4217	2.5227	2.6278
900.	P(ATM)	3.2956	33.209	66.984	101.34	136.27	171.80	358.72	562.00	783.00	1023.2
	Z	1.0008	1.0085	1.0171	1.0258	1.0346	1.0435	1.0894	1.1378	1.1890	1.2429
	CV/R	2.5943	2.5958	2.5974	2.5991	2.6008	2.6025	2.6113	2.6206	2.6303	2.6406
	CP/R	3.5941	3.5935	3.5930	3.5926	3.5922	3.5918	3.5910	3.5917	3.5938	3.5973
	CP/CV	1.3854	1.3844	1.3833	1.3822	1.3812	1.3801	1.3752	1.3706	1.3663	1.3623
	A(KPS)	2.2686	2.2861	2.3046	2.3233	2.3421	2.3610	2.4580	2.5580	2.6637	2.7727
1000.	P(ATM)	3.6617	36.894	74.409	112.55	151.34	190.78	398.08	623.27	867.80	1133.3
	Z	1.0008	1.0084	1.0169	1.0255	1.0341	1.0429	1.0881	1.1357	1.1859	1.2390
	CV/R	2.6332	2.6347	2.6363	2.6379	2.6396	2.6413	2.6499	2.6590	2.6685	2.6785
	CP/R	3.6330	3.6323	3.6317	3.6311	3.6305	3.6301	3.6286	3.6284	3.6297	3.6322
	CP/CV	1.3797	1.3787	1.3776	1.3765	1.3754	1.3744	1.3693	1.3646	1.3602	1.3561
	A(KPS)	2.3874	2.4045	2.4237	2.4430	2.4624	2.4820	2.5823	2.6865	2.7948	2.9074
1200.	P(ATM)	4.3940	44.263	89.251	134.97	181.45	228.64	476.82	745.37	1036.6	1352.0
	Z	1.0008	1.0082	1.0164	1.0248	1.0332	1.0417	1.0856	1.1318	1.1805	1.2318
	CV/R	2.7277	2.7291	2.7307	2.7323	2.7339	2.7355	2.7439	2.7528	2.7617	2.7713
	CP/R	3.7274	3.7266	3.7258	3.7250	3.7243	3.7236	3.7210	3.7197	3.7196	3.7208
	CP/CV	1.3665	1.3655	1.3644	1.3633	1.3623	1.3612	1.3561	1.3513	1.3469	1.3426
	A(KPS)	2.6027	2.6208	2.6411	2.6616	2.6822	2.7029	2.8098	2.9191	3.0333	3.1519
1400.	P(ATM)	5.1262	51.630	104.08	157.38	211.52	266.53	554.95	866.98	1204.4	1569.3
	Z	1.0008	1.0080	1.0160	1.0242	1.0324	1.0407	1.0834	1.1284	1.1757	1.2255
	CV/R	2.8320	2.8333	2.8348	2.8364	2.8380	2.8396	2.8477	2.8561	2.8649	2.8742
	CP/R	3.8317	3.8308	3.8298	3.8289	3.8280	3.8272	3.8238	3.8217	3.8208	3.8210
	CP/CV	1.3530	1.3520	1.3510	1.3499	1.3488	1.3478	1.3428	1.3381	1.3336	1.3294
	A(KPS)	2.7972	2.8163	2.8375	2.8590	2.8805	2.9023	3.0133	3.1284	3.2477	3.3715
1600.	P(ATM)	5.8584	58.995	118.91	179.77	241.57	304.33	633.11	988.18	1371.5	1785.3
	Z	1.0008	1.0078	1.0157	1.0236	1.0317	1.0398	1.0815	1.1254	1.171-	1.2199
	CV/R	2.9353	2.9366	2.9381	2.9396	2.9412	2.9427	2.9506	2.9588	2.9674	2.9763
	CP/R	3.9350	3.9340	3.9329	3.9319	3.9310	3.9300	3.9261	3.9234	3.9218	3.9212
	CP/CV	1.3406	1.3396	1.3386	1.3376	1.3365	1.3355	1.3306	1.3260	1.3216	1.3175
	A(KPS)	2.9766	2.9964	3.0185	3.0408	3.0632	3.0858	3.2012	3.3207	3.4445	3.5728
1800.	P(ATM)	6.5906	66.359	133.73	202.14	271.59	342.11	711.12	1109.0	1538.0	2008.3
	Z	1.0008	1.0076	1.0154	1.0231	1.0310	1.0389	1.0796	1.1227	1.1677	1.2140
	CV/R	3.0320	3.0333	3.0348	3.0363	3.0378	3.0393	3.0469	3.0549	3.0633	3.0720
	CP/R	4.0317	4.0307	4.0295	4.0284	4.0274	4.0264	4.0221	4.0189	4.0167	4.0156
	CP/CV	1.3297	1.3288	1.3278	1.3268	1.3258	1.3248	1.3200	1.3155	1.3113	1.3072
	A(KPS)	3.1443	3.1647	3.1876	3.2107	3.2339	3.2573	3.3766	3.5001	3.6279	3.7603
2000.	P(ATM)	7.3228	73.722	148.55	224.51	301.60	379.85	789.00	1229.6	1703.9	2214.4
	Z	1.0007	1.0075	1.0151	1.0227	1.0304	1.0382	1.0783	1.1202	1.1643	1.2105
	CV/R	3.1200	3.1213	3.1227	3.1241	3.1256	3.1271	3.1348	3.1424	3.1505	3.1590
	CP/R	4.1197	4.1186	4.1174	4.1163	4.1151	4.1141	4.1095	4.1059	4.1033	4.1017
	CP/CV	1.3204	1.3195	1.3185	1.3176	1.3166	1.3156	1.3110	1.3066	1.3024	1.2984
	A(KPS)	3.3027	3.3238	3.3474	3.3712	3.3951	3.4192	3.5421	3.6693	3.8007	3.9368
2500.	P(ATM)	9.1532	92.125	185.58	280.38	375.54	474.09	983.24	1529.9	2116.6	2746.3
	Z	1.0007	1.0072	1.0145	1.0218	1.0292	1.0366	1.0750	1.1151	1.1570	1.2010
	CV/R	3.3019	3.3032	3.3045	3.3059	3.3073	3.3087	3.3159	3.3233	3.3310	3.3390
	CP/R	4.3017	4.3005	4.2992	4.2980	4.2968	4.2956	4.2904	4.2862	4.2829	4.2805
	CP/CV	1.3028	1.3019	1.3010	1.3001	1.2992	1.2983	1.2939	1.2897	1.2858	1.2820
	A(KPS)	3.6676	3.6901	3.7153	3.7407	3.7662	3.7918	3.9226	4.0577	4.1972	4.3413
3000.	P(ATM)	10.984	110.52	222.58	336.20	451.40	568.20	1176.9	1828.9	2527.1	3274.5
	Z	1.0007	1.0069	1.0140	1.0210	1.0282	1.0354	1.0723	1.1109	1.1512	1.1933
	CV/R	3.4410	3.4421	3.4435	3.4448	3.4461	3.4475	3.4544	3.4615	3.4688	3.4766
	CP/R	4.4407	4.4395	4.4381	4.4368	4.4356	4.4344	4.4289	4.4243	4.4205	4.4176
	CP/CV	1.2905	1.2897	1.2889	1.2880	1.2871	1.2863	1.2821	1.2781	1.2743	1.2707
	A(KPS)	3.9987	4.0224	4.0489	4.0756	4.1024	4.1296	4.2669	4.4088	4.5551	4.7061

(Table continues)

Table 2 (Continued)

TEMPERATURE (DEGREE K)		DENSITY (AMAGAT)									
		300.	350.	400.	450.	500.	600.	700.	800.	900.	1000.
500.	P(ATM)	725.94	888.98	1067.8	1261.3	1473.5	1957.8	2534.9	3222.7	4043.2	5022.7
	Z	1.3228	1.3864	1.4562	1.5322	1.6109	1.7837	1.9795	2.2031	2.4557	2.7457
	CV/R	2.5834	2.5963	2.6100	2.6246	2.6400	2.6738	2.7119	2.7551	2.8041	2.8598
	CP/R	3.5666	3.5807	3.5966	3.6144	3.6340	3.6789	3.7319	3.7934	3.8644	3.9456
	CP/CV	1.3806	1.3791	1.3780	1.3771	1.3765	1.3759	1.3761	1.3769	1.3781	1.3796
	A(KPS)	2.2033	2.3012	2.4038	2.5104	2.6222	2.8616	3.1248	3.4122	3.7291	4.0781
600.	P(ATM)	867.29	1061.2	1272.7	1503.3	1754.6	2327.3	3007.8	3816.8	4779.0	5924.5
	Z	1.3169	1.3812	1.4494	1.5218	1.5986	1.7670	1.9574	2.1734	2.4189	2.6988
	CV/R	2.5894	2.6019	2.6151	2.6290	2.6437	2.6759	2.7120	2.7527	2.7986	2.8506
	CP/R	3.5681	3.5712	3.5841	3.5985	3.6146	3.6519	3.6962	3.7478	3.8074	3.8755
	CP/CV	1.3748	1.3726	1.3709	1.3688	1.3672	1.3647	1.3629	1.3615	1.3604	1.3595
	A(KPS)	2.3989	2.5030	2.6117	2.7252	2.8437	3.0970	3.3747	3.6772	4.0096	4.3767
700.	P(ATM)	1007.3	1231.6	1475.8	1741.7	2031.1	2689.3	3469.3	4393.9	5490.5	6792.3
	Z	1.3110	1.3739	1.4408	1.5112	1.5862	1.7501	1.9352	2.1445	2.3820	2.6521
	CV/R	2.6013	2.6133	2.6260	2.6394	2.6535	2.6843	2.7187	2.7572	2.8005	2.8492
	CP/R	3.5632	3.5723	3.5828	3.5949	3.6084	3.6400	3.6779	3.7223	3.7736	3.8322
	CP/CV	1.3698	1.3669	1.3643	1.3620	1.3598	1.3561	1.3528	1.3500	1.3475	1.3450
	A(KPS)	2.5757	2.6852	2.7993	2.9183	3.0425	3.3074	3.5953	3.9120	4.2571	4.6352
800.	P(ATM)	1146.2	1400.3	1676.7	1977.1	2303.8	3045.2	3921.4	4957.2	6182.5	7632.9
	Z	1.3054	1.3669	1.4321	1.5011	1.5742	1.7340	1.9139	2.1171	2.3470	2.6078
	CV/R	2.6218	2.6334	2.6456	2.6586	2.6722	2.7017	2.7349	2.7712	2.8122	2.8581
	CP/R	3.5773	3.5847	3.5935	3.6037	3.6153	3.6426	3.6756	3.7144	3.7593	3.8107
	CP/CV	1.3645	1.3613	1.3583	1.3555	1.3529	1.3483	1.3442	1.3404	1.3368	1.3333
	A(KPS)	2.7373	2.8513	2.9701	3.0939	3.2229	3.4978	3.7970	4.1231	4.4790	4.8680
900	P(ATM)	1284.2	1567.7	1875.7	2210.1	2573.3	3395.9	4365.6	5509.2	6858.4	8451.2
	Z	1.3000	1.3603	1.4241	1.4916	1.5630	1.7188	1.8940	2.0914	2.3143	2.5666
	CV/R	2.6513	2.6626	2.6745	2.6870	2.7001	2.7285	2.7601	2.7951	2.8342	2.8777
	CP/R	3.6021	3.6082	3.6156	3.6244	3.6344	3.6583	3.6874	3.7218	3.7617	3.8073
	CP/CV	1.3586	1.3551	1.3519	1.3489	1.3460	1.3408	1.3360	1.3315	1.3273	1.3230
	A(KPS)	2.8862	3.0043	3.1272	3.2551	3.3884	3.6719	3.9800	4.3151	4.6802	5.0784
1000.	P(ATM)	1421.4	1734.0	2073.1	2441.0	2840.1	3742.2	4803.3	6051.5	7520.6	9250.7
	Z	1.2950	1.3541	1.4166	1.4826	1.5525	1.7047	1.8755	2.0675	2.2839	2.5284
	CV/R	2.6890	2.7000	2.7115	2.7236	2.7364	2.7638	2.7942	2.8279	2.8653	2.9068
	CP/R	3.0361	3.6412	3.6475	3.6550	3.6638	3.6849	3.7109	3.7417	3.7776	3.8186
	CP/CV	1.3522	1.3486	1.3452	1.3420	1.3389	1.3333	1.3280	1.3231	1.3184	1.3137
	A(KPS)	3.0264	3.1460	3.2726	3.4043	3.5413	3.8325	4.1484	4.4915	4.8645	5.2708
1200.	P(ATM)	1693.7	2063.6	2464.0	2897.5	3366.6	4423.9	5662.0	7117.3	8811.5	10804.
	Z	1.2839	1.3429	1.4031	1.4666	1.5336	1.6794	1.8423	2.0249	2.2300	2.4608
	CV/R	2.7613	2.7918	2.8028	2.8143	2.8263	2.8522	2.8807	2.9121	2.9467	2.9848
	CP/R	3.7232	3.7267	3.7313	3.7371	3.7439	3.7608	3.7820	3.8074	3.8371	3.8711
	CP/CV	1.3380	1.3349	1.3313	1.3279	1.3246	1.3185	1.3129	1.3074	1.3022	1.2969
	A(KPS)	3.2756	3.4029	3.5358	3.6739	3.8173	4.1216	4.4508	4.8073	5.1938	5.6134
1400.	P(ATM)	1963.7	2389.9	2850.5	3348.1	3885.6	5093.5	6502.8	8147.1	10066.	12307.
	Z	1.2779	1.3331	1.3913	1.4526	1.5172	1.6574	1.8136	1.9882	2.1836	2.4028
	CV/R	2.8838	2.8939	2.9044	2.9154	2.9269	2.9515	2.9785	3.0080	3.0404	3.0760
	CP/R	3.8223	3.8246	3.8288	3.8324	3.8379	3.8517	3.8693	3.8908	3.9160	3.9451
	CP/CV	1.3254	1.3216	1.3188	1.3146	1.3112	1.3050	1.2991	1.2935	1.2880	1.2825
	A(KPS)	3.4998	3.6330	3.7719	3.9146	4.0635	4.3787	4.7190	5.0866	5.4843	5.9149
1600.	P(ATM)	2231.8	2713.6	3233.3	3793.9	4398.4	5753.4	7329.0	9161.1	11297.	13772.
	Z	1.2709	1.3245	1.3808	1.4402	1.5027	1.6381	1.7886	1.9567	2.1433	2.3526
	CV/R	2.9896	2.9953	3.0059	3.0160	3.0271	3.0507	3.0764	3.1044	3.1351	3.1686
	CP/R	3.9217	3.9232	3.9257	3.9291	3.9335	3.9449	3.9599	3.9783	4.0002	4.0254
	CP/CV	1.3135	1.3098	1.3062	1.3027	1.2994	1.2931	1.2872	1.2815	1.2760	1.2704
	A(KPS)	3.7057	3.8435	3.9863	4.1345	4.2881	4.6128	4.9627	5.3399	5.7471	6.1871
1800.	P(ATM)	2498.4	3035.1	3613.1	4235.7	4906.1	6405.2	8143.1	10158.	12494.	15204.
	Z	1.2646	1.3168	1.3716	1.4293	1.4899	1.6210	1.7664	1.9280	2.1080	2.3087
	CV/R	3.0810	3.0904	3.1002	3.1105	3.1211	3.1438	3.1684	3.1953	3.2245	3.2562
	CP/R	4.0155	4.0163	4.0188	4.0207	4.0242	4.0338	4.0466	4.0627	4.0819	4.1042
	CP/CV	1.3033	1.2996	1.2968	1.2926	1.2893	1.2831	1.2772	1.2715	1.2659	1.2604
	A(KPS)	3.8973	4.0392	4.1862	4.3385	4.4963	4.8296	5.1879	5.5736	5.9892	6.4374
2000.	P(ATM)	2765.7	3354.6	3990.3	4674.0	5409.3	7050.1	8947.0	11140.	13676.	16609.
	Z	1.2590	1.3099	1.3633	1.4195	1.4785	1.6058	1.7467	1.9030	2.0766	2.2699
	CV/R	3.1678	3.1770	3.1866	3.1964	3.2067	3.2286	3.2524	3.2782	3.3061	3.3364
	CP/R	4.1011	4.1014	4.1025	4.1045	4.1073	4.1154	4.1266	4.1407	4.1578	4.1777
	CP/CV	1.2946	1.2910	1.2875	1.2841	1.2809	1.2747	1.2688	1.2631	1.2576	1.2521
	A(KPS)	4.0775	4.2232	4.3740	4.5301	4.6917	5.0326	5.3987	5.7920	6.2152	6.6708
2500.	P(ATM)	3421.9	4146.6	4923.9	5757.5	6651.3	8637.3	10920.	13544.	165[illegible].	20027.
	Z	1.2470	1.2953	1.3458	1.3988	1.4544	1.5739	1.7055	1.8509	2.0[illegible]16	2.1896
	CV/R	3.3473	3.3560	3.3649	3.3742	3.3838	3.4042	3.4262	3.4499	3.4755	3.5030
	CP/R	4.2790	4.2787	4.2783	4.2791	4.2807	4.2860	4.2941	4.3047	4.3178	4.3334
	CP/CV	1.2783	1.2748	1.2714	1.2682	1.2650	1.2590	1.2533	1.2478	1.2424	1.2370
	A(KPS)	4.4902	4.6440	4.8035	4.9674	5.1374	5.4949	5.8776	6.2875	6.7269	7.1984
3000.	P(ATM)	4074.4	4930.6	5846.7	6826.8	7875.3	10196.	12852.	15889.	19364.	23340.
	Z	1.2374	1.2835	1.3317	1.3822	1.4350	1.5483	1.6727	1.8095	1.9602	2.1264
	CV/R	3.4845	3.4927	3.5012	3.5100	3.5191	3.5384	3.5590	3.5811	3.6049	3.6305
	CP/R	4.4154	4.4140	4.4134	4.4134	4.4141	4.4176	4.4235	4.4317	4.4422	4.4548
	CP/CV	1.2672	1.2638	1.2605	1.2574	1.2543	1.2485	1.2429	1.2375	1.2323	1.2271
	A(KPS)	4.8620	5.0228	5.1888	5.3602	5.5372	5.9088	6.3055	6.7293	7.1823	7.6672

(Table continues)

Table 2 (Continued)

TEMPERATURE (DEGREE K)		DENSITY (AMAGAT)									
		1100.	1200.	1300.	1400.	1500.	1600.	1700.	1800.	1900.	2000.
500.	P(ATM)	6193.8	7996.1	9278.6	11302.	13741.	16691.	20271.	24631.	29966.	36523.
	Z	3.0788	3.4683	3.9016	4.4129	5.0077	5.7028	6.5183	7.4804	8.6214	9.9825
	CV/R	2.9234	2.9962	3.0798	3.1761	3.2875	3.4168	3.5676	3.7441	3.9517	4.1974
	CP/R	4.0481	4.1434	4.2631	4.3991	4.5538	4.7301	4.9313	5.1618	5.4268	5.7326
	CP/CV	1.3813	1.3829	1.3849	1.3851	1.3852	1.3843	1.3823	1.3787	1.3733	1.3658
	A(KPS)	4.4033	4.8801	5.3486	5.8938	6.4654	7.1135	7.8370	8.6469	9.5557	10.578
600.	P(ATM)	7290.0	8920.1	10870.	13206.	16014.	19398.	23487.	28449.	34485.	41888.
	Z	3.0190	3.3862	3.8004	4.2972	4.8634	5.5227	6.2938	7.1998	8.2699	9.5409
	CV/R	2.9086	2.9788	3.0531	3.1406	3.2411	3.3587	3.4904	3.6455	3.8261	4.0373
	CP/R	3.9530	4.0409	4.1403	4.2525	4.3793	4.5227	4.6850	4.8691	5.0785	5.3174
	CP/CV	1.3586	1.3575	1.3561	1.3540	1.3512	1.3473	1.3422	1.3357	1.3273	1.3171
	A(KPS)	4.7763	5.2187	5.7070	6.2469	6.8445	7.5086	8.2468	9.0694	9.9891	11.020
700.	P(ATM)	8339.4	10101.	12376.	14998.	18138.	21908.	26448.	31933.	38586.	46690.
	Z	2.9802	3.3127	3.7172	4.1830	4.7215	5.3464	6.0744	6.9270	7.9297	9.1153
	CV/R	2.9041	2.9662	3.0367	3.1187	3.2079	3.3121	3.4315	3.5688	3.7271	3.9104
	CP/R	3.8987	3.9738	4.0585	4.1536	4.2604	4.3803	4.5150	4.6664	4.8369	5.0294
	CP/CV	1.3425	1.3397	1.3365	1.3327	1.3281	1.3225	1.3158	1.3076	1.2978	1.2861
	A(KPS)	5.0980	5.5857	6.0071	6.5599	7.1783	7.8455	8.5941	9.4257	10.352	11.386
800.	P(ATM)	9351.7	11391.	13815.	16702.	20147.	24248.	29214.	35160.	42355.	51079.
	Z	2.9046	3.2432	3.6308	4.0759	4.5889	5.1821	5.8711	6.6747	7.6163	8.7250
	CV/R	2.9097	2.9676	3.0320	3.1067	3.1902	3.2958	3.3928	3.5157	3.6562	3.8173
	CP/R	3.8789	3.9344	4.0188	4.0903	4.1822	4.2847	4.3991	4.5286	4.6689	4.8278
	CP/CV	1.3297	1.3258	1.3215	1.3166	1.3109	1.3043	1.2966	1.2875	1.2770	1.2647
	A(KPS)	5.2936	5.7602	6.2723	6.8353	7.4554	8.1396	8.8959	9.7337	10.664	11.699
900.	P(ATM)	10334.	12561.	15201.	18335.	22064.	26510.	31826.	38262.	45875.	55142.
	Z	2.8530	3.1790	3.5511	3.9773	4.4670	5.0318	5.6855	6.4454	7.3326	8.3731
	CV/R	2.9264	2.9808	3.0419	3.1104	3.1876	3.2746	3.3729	3.4841	3.6103	3.7537
	CP/R	3.8596	3.9171	3.9821	4.0545	4.1349	4.2242	4.3231	4.4325	4.5537	4.6878
	CP/CV	1.3187	1.3141	1.3091	1.3035	1.2972	1.2900	1.2817	1.2722	1.2613	1.2489
	A(KPS)	5.5133	5.9890	6.5094	7.0815	7.7095	8.4087	9.1629	10.005	10.938	11.973
1000.	P(ATM)	11298.	13697.	16542.	19910.	23905.	28655.	34316.	41082.	49196.	58959.
	Z	2.8053	3.1198	3.4779	3.8870	4.3559	4.8950	5.5172	6.2382	7.0771	8.0575
	CV/R	2.9529	3.0044	3.0618	3.1260	3.1979	3.2784	3.3689	3.4706	3.5851	3.7142
	CP/R	3.8650	3.9171	3.9759	4.0398	4.1112	4.1901	4.2769	4.3724	4.4773	4.5924
	CP/CV	1.3089	1.3038	1.2983	1.2923	1.2856	1.2781	1.2695	1.2598	1.2489	1.2364
	A(KPS)	5.7136	6.1971	6.7258	7.3043	7.9388	8.6358	9.4026	10.248	11.182	12.216
1200.	P(ATM)	13141.	15887.	19117.	22920.	27459.	32716.	39006.	46478.	55387.	66024.
	Z	2.7211	3.0155	3.3494	3.7298	4.1628	4.6573	5.2260	5.8813	6.6391	7.5192
	CV/R	3.0270	3.0737	3.1253	3.1826	3.2461	3.3167	3.3951	3.4823	3.5794	3.6873
	CP/R	3.9046	3.9528	4.0007	4.0536	4.1118	4.1755	4.2449	4.3204	4.4022	4.4907
	CP/CV	1.2916	1.2860	1.2801	1.2737	1.2667	1.2589	1.2503	1.2407	1.2299	1.2179
	A(KPS)	6.0695	6.5658	7.1866	7.6967	8.3416	9.0475	9.8212	10.671	11.606	12.637
1400.	P(ATM)	14927.	17994.	21578.	25785.	30727.	36543.	43400.	51586.	61111.	72527.
	Z	2.6402	2.9209	3.2405	3.5958	3.9993	4.4509	4.9842	5.5864	6.2794	7.0797
	CV/R	3.1151	3.1581	3.2054	3.2575	3.3148	3.3780	3.4477	3.5245	3.6091	3.7023
	CP/R	3.9779	4.0147	4.0554	4.1002	4.1492	4.2024	4.2600	4.3221	4.3886	4.4595
	CP/CV	1.2770	1.2712	1.2652	1.2587	1.2517	1.2440	1.2356	1.2263	1.2160	1.2045
	A(KPS)	6.3817	6.8884	7.4398	8.0381	8.6910	9.4035	10.187	11.035	11.970	12.998
1600.	P(ATM)	16646.	20025.	23951.	28537.	33903.	40190.	47572.	56258.	66507.	78616.
	Z	2.5872	2.8506	3.1473	3.4821	3.8610	4.2910	4.7884	5.3391	5.9791	6.7149
	CV/R	3.2052	3.2453	3.2891	3.3372	3.3898	3.4474	3.5105	3.5795	3.6550	3.7373
	CP/R	4.0540	4.0860	4.1214	4.1602	4.2025	4.2481	4.2972	4.3497	4.4054	4.4642
	CP/CV	1.2648	1.2591	1.2530	1.2466	1.2397	1.2323	1.2241	1.2152	1.2053	1.1945
	A(KPS)	6.6630	7.1784	7.7379	8.3439	9.0033	9.7212	10.504	11.358	12.293	13.317
1800.	P(ATM)	18350.	22404.	26253.	31199.	36965.	43676.	51560.	60795.	71631.	84389.
	Z	2.5331	2.7843	3.0664	3.3839	3.7419	4.1469	4.6062	5.1386	5.7247	6.4871
	CV/R	3.2909	3.3284	3.3697	3.4145	3.4633	3.5165	3.5744	3.6375	3.7058	3.7800
	CP/R	4.1285	4.1578	4.1898	4.2232	4.2604	4.3003	4.3431	4.3904	4.4363	4.4863
	CP/CV	1.2548	1.2491	1.2432	1.2369	1.2301	1.2229	1.2150	1.2065	1.1971	1.1868
	A(KPS)	6.9213	7.4444	8.0103	8.6234	9.2885	10.011	10.797	11.653	12.586	13.607
2000.	P(ATM)	20005.	23937.	28495.	33786.	39932.	47085.	55423.	65158.	76550.	89910.
	Z	2.4053	2.7260	2.9956	3.2980	3.6382	4.0217	4.4554	4.9470	5.5060	6.1436
	CV/R	3.3694	3.4051	3.4448	3.4861	3.5319	3.5815	3.6353	3.6935	3.7564	3.8242
	CP/R	4.2003	4.2257	4.2536	4.2842	4.3173	4.3528	4.3906	4.4306	4.4724	4.5150
	CP/CV	1.2466	1.2410	1.2351	1.2289	1.2224	1.2154	1.2078	1.1995	1.1906	1.1808
	A(KPS)	7.1610	7.6917	8.2640	8.8828	9.5529	10.279	11.068	11.925	12.858	13.876
2500	P(ATM)	24017.	28600.	33897.	39994.	47032.	55164.	64575.	75482.	88146.	102879.
	Z	2.3670	2.6064	2.8507	3.1233	3.4280	3.7694	4.1529	4.5847	5.0721	5.6238
	CV/R	3.5327	3.5640	3.5995	3.6365	3.6766	3.7187	3.7660	3.8157	3.8688	3.9255
	CP/R	4.3512	4.3712	4.3934	4.4175	4.4436	4.4713	4.5007	4.5314	4.5631	4.5956
	CP/CV	1.2317	1.2262	1.2206	1.2148	1.2086	1.2021	1.1951	1.1876	1.1795	1.1707
	A(KPS)	7.7048	8.2492	8.8358	9.4661	10.147	10.881	11.676	12.535	13.467	14.479
3000.	P(ATM)	27890.	33192.	39074.	45923.	53784.	62818.	73212.	85187.	99805.	114977.
	Z	2.3100	2.5132	2.7384	2.9865	3.2668	3.5770	3.9237	4.3118	4.7474	5.2376
	CV/R	3.6576	3.6872	3.7187	3.7525	3.7887	3.8275	3.8686	3.9126	3.9594	4.0089
	CP/R	4.4694	4.4858	4.5041	4.5241	4.5455	4.5683	4.5924	4.6173	4.6429	4.6688
	CP/CV	1.2219	1.2166	1.2112	1.2056	1.1998	1.1936	1.1871	1.1801	1.1726	1.1646
	A(KPS)	8.1664	8.7429	9.3408	9.9813	10.671	11.413	12.212	13.074	14.005	15.012

Table 3
Relative Internal Energy and Enthalpy (calories/gm-mole) and Relative Entropy

TEMPERATURE (DEGREES K)		DENSITY(AMAGAT)										
		1.	10.	50.	100.	150.	200.	250.	300.	350.	400.	450.
500.	U-U0	1128.2	1128.8	1129.5	1133.1	1136.7	1140.9	1145.7	1149.8	1154.6	1159.4	1164.8
	H-H0	1577.4	1580.1	1625.9	1678.2	1735.6	1797.3	1854.5	1920.4	1990.4	2064.7	2143.7
	(S-S0)/R	1.5689	-0.4012	-2.4446	-3.1812	-3.6313	-3.9048	-4.2351	-4.4659	-4.6699	-4.8567	-5.0291
520.	U-U0	1228.4	1227.1	1230.8	1234.9	1238.7	1242.6	1247.3	1252.2	1257.5	1263.1	1269.1
	H-H0	1717.3	1720.4	1767.8	1822.3	1880.8	1941.1	2009.6	2074.5	2143.3	2224.6	2306.7
	(S-S0)/R	1.6078	-0.7022	-2.3456	-3.0616	-3.5313	-3.8044	-4.1347	-4.3040	-4.5600	-4.7473	-4.9222
540.	U-U0	1326.6	1327.3	1330.6	1334.9	1339.5	1344.3	1349.5	1354.9	1360.7	1366.9	1373.4
	H-H0	1857.2	1860.7	1909.7	1966.4	2026.3	2089.8	2157.1	2228.4	2304.3	2384.4	2469.6
	(S-S0)/R	1.7029	-0.6071	-2.2499	-2.9857	-3.4391	-3.7678	-4.0372	-4.2670	-4.4706	-4.6538	-4.8232
560.	U-U0	1426.8	1427.6	1431.2	1435.9	1440.9	1446.1	1451.7	1457.7	1464.0	1470.6	1477.7
	H-H0	1997.2	2007.0	2051.7	2110.5	2172.7	2238.6	2308.4	2382.3	2460.7	2544.0	2632.5
	(S-S0)/R	1.7947	-0.5152	-2.1578	-2.8933	-3.3423	-3.6746	-3.9436	-4.1730	-4.3755	-4.5586	-4.7277
580.	U-U0	1527.1	1528.0	1531.8	1536.9	1542.1	1548.0	1554.0	1560.5	1567.2	1574.4	1582.1
	H-H0	2137.3	2147.5	2193.8	2254.7	2319.1	2387.5	2459.6	2536.2	2617.1	2703.5	2794.9
	(S-S0)/R	1.8833	-0.4266	-2.0689	-2.8041	-3.2527	-3.5846	-3.8532	-4.0822	-4.2863	-4.4671	-4.6355
600.	U-U0	1627.5	1628.4	1632.6	1638.0	1643.8	1649.9	1656.4	1663.3	1670.6	1678.3	1686.5
	H-H0	2277.5	2287.9	2335.9	2398.9	2465.5	2536.1	2610.6	2690.0	2773.9	2862.9	2957.3
	(S-S0)/R	1.9680	-0.3403	-1.9820	-2.7178	-3.1660	-3.4976	-3.7658	-3.9944	-4.1961	-4.3782	-4.5464
620.	U-U0	1727.9	1728.9	1733.4	1739.2	1745.4	1751.9	1758.9	1766.2	1774.0	1782.2	1791.0
	H-H0	2417.7	2428.5	2478.6	2543.1	2612.0	2684.8	2762.0	2843.7	2930.3	3022.2	3119.6
	(S-S0)/R	2.0519	-0.2579	-1.8997	-2.6343	-3.0822	-3.4134	-3.6813	-3.9095	-4.1107	-4.2927	-4.4602
640.	U-U0	1828.5	1829.5	1834.3	1840.5	1847.1	1854.0	1861.4	1869.2	1877.5	1886.2	1895.5
	H-H0	2558.0	2569.2	2620.3	2687.5	2758.9	2833.6	2913.2	2997.5	3086.8	3181.4	3281.8
	(S-S0)/R	2.1322	-0.1775	-1.8191	-2.5533	-3.0009	-3.3318	-3.5995	-3.8272	-4.0281	-4.2096	-4.3767
660.	U-U0	1929.2	1930.3	1935.3	1941.9	1948.8	1956.2	1964.0	1972.3	1981.0	1990.3	2000.1
	H-H0	2698.4	2709.9	2762.6	2831.8	2905.0	2982.5	3064.4	3151.2	3243.2	3341.6	3444.0
	(S-S0)/R	2.2102	-0.0995	-1.7409	-2.4748	-2.9221	-3.2527	-3.5199	-3.7473	-3.9478	-4.1290	-4.2956
680.	U-U0	2029.9	2031.1	2036.4	2043.3	2050.7	2058.5	2066.7	2075.4	2084.7	2094.4	2104.8
	H-H0	2838.9	2850.6	2905.1	2976.3	3051.7	3131.4	3215.7	3305.0	3399.5	3499.8	3606.0
	(S-S0)/R	2.2859	-0.0237	-1.6649	-2.3986	-2.8456	-3.1758	-3.4427	-3.6698	-3.8700	-4.0507	-4.2170
700.	U-U0	2130.8	2132.0	2137.6	2144.9	2152.7	2160.9	2169.5	2178.7	2188.4	2198.7	2209.6
	H-H0	2979.6	2991.6	3047.6	3120.9	3198.4	3280.3	3367.0	3458.8	3555.9	3658.9	3768.0
	(S-S0)/R	2.3595	0.0500	-1.5910	-2.3244	-2.7712	-3.1011	-3.3676	-3.5945	-3.7942	-3.9746	-4.1405
720.	U-U0	2231.9	2233.1	2239.0	2246.7	2254.8	2263.4	2272.5	2282.1	2292.3	2303.1	2314.5
	H-H0	3120.4	3132.8	3190.3	3265.6	3345.2	3429.4	3518.4	3612.8	3712.4	3818.0	3930.0
	(S-S0)/R	2.4312	0.1216	-1.5191	-2.2523	-2.6987	-3.0284	-3.2946	-3.5211	-3.7206	-3.9006	-4.0661
740.	U-U0	2333.0	2334.6	2340.5	2348.6	2357.1	2366.1	2375.6	2385.7	2396.3	2407.6	2419.6
	H-H0	3261.3	3274.2	3333.1	3410.4	3492.1	3578.5	3669.9	3766.5	3868.8	3977.2	4092.0
	(S-S0)/R	2.5010	0.1915	-1.4401	-2.1820	-2.6282	-2.9570	-3.2235	-3.4487	-3.6488	-3.8285	-3.9936
760.	U-U0	2434.4	2435.8	2442.2	2450.6	2459.5	2468.9	2478.9	2489.4	2500.5	2512.3	2524.8
	H-H0	3402.4	3415.7	3476.1	3555.4	3639.2	3727.8	3821.4	3920.5	4025.4	4136.4	4254.0
	(S-S0)/R	2.5690	0.2595	-1.3808	-2.1135	-2.5594	-2.8886	-3.1542	-3.3801	-3.5780	-3.7582	-3.9239
780.	U-U0	2535.9	2537.4	2544.3	2552.9	2562.1	2571.8	2582.3	2593.3	2604.9	2617.1	2630.1
	H-H0	3543.7	3557.3	3619.2	3700.5	3786.4	3877.2	3973.1	4074.6	4182.0	4295.7	4416.1
	(S-S0)/R	2.6354	0.3260	-1.3142	-2.0467	-2.4923	-2.8212	-3.0866	-3.3122	-3.5107	-3.6887	-3.8541
800.	U-U0	2637.7	2639.2	2646.2	2655.3	2664.9	2675.1	2685.9	2697.3	2709.4	2722.1	2735.7
	H-H0	3685.2	3699.1	3762.6	3845.8	3933.8	4026.7	4124.9	4228.8	4338.7	4455.0	4578.2
	(S-S0)/R	2.7002	0.3906	-1.2492	-1.9814	-2.4268	-2.7555	-3.0206	-3.2459	-3.4441	-3.6220	-3.7869
820.	U-U0	2739.6	2741.2	2748.4	2757.9	2768.0	2778.6	2789.7	2801.6	2814.1	2827.4	2841.4
	H-H0	3826.9	3841.2	3906.1	3991.3	4081.5	4176.4	4276.9	4383.1	4495.5	4614.4	4740.3
	(S-S0)/R	2.7636	0.4542	-1.1856	-1.9176	-2.3628	-2.6917	-2.9560	-3.1811	-3.3790	-3.5574	-3.7212
840.	U-U0	2841.8	2843.4	2850.9	2860.8	2871.2	2882.2	2893.8	2906.1	2919.0	2932.8	2947.3
	H-H0	3968.9	3983.4	4049.9	4137.0	4229.1	4326.3	4429.0	4537.6	4652.4	4773.9	4902.6
	(S-S0)/R	2.8256	0.5163	-1.1234	-1.8552	-2.3002	-2.6283	-2.8929	-3.1177	-3.3153	-3.4935	-3.6580
860.	U-U0	2944.7	2945.9	2953.7	2963.9	2974.7	2986.0	2998.1	3010.8	3024.2	3038.4	3053.4
	H-H0	4111.0	4125.9	4193.8	4282.9	4377.0	4476.3	4581.3	4692.2	4809.5	4933.6	5065.0
	(S-S0)/R	2.8862	0.5769	-1.0628	-1.7941	-2.2389	-2.5668	-2.8312	-3.0557	-3.2531	-3.4310	-3.5961
880.	U-U0	3046.9	3048.6	3056.7	3067.2	3078.4	3090.1	3102.6	3115.7	3129.6	3144.3	3159.8
	H-H0	4253.4	4268.7	4338.1	4429.1	4525.2	4626.6	4733.6	4847.0	4966.8	5093.4	5227.4
	(S-S0)/R	2.9456	0.6364	-1.0038	-1.7343	-2.1789	-2.5066	-2.7707	-2.9950	-3.1923	-3.3698	-3.5325
900.	U-U0	3149.8	3151.6	3159.9	3170.8	3182.3	3194.5	3207.3	3220.9	3235.2	3250.4	3266.4
	H-H0	4396.1	4411.7	4482.5	4575.5	4673.6	4777.1	4886.5	5002.1	5124.2	5253.4	5390.1
	(S-S0)/R	3.0039	0.6946	-0.9448	-1.6757	-2.1201	-2.4475	-2.7114	-2.9354	-3.1325	-3.3096	-3.4722
920.	U-U0	3253.0	3254.9	3263.5	3274.7	3286.6	3299.1	3312.4	3326.4	3341.1	3356.8	3373.3
	H-H0	4539.1	4555.0	4627.3	4722.2	4822.2	4927.9	5039.4	5157.3	5281.8	5413.5	5552.9
	(S-S0)/R	3.0609	0.7518	-0.8873	-1.6183	-2.0624	-2.3897	-2.6533	-2.8771	-3.0737	-3.2507	-3.4131
940.	U-U0	3356.5	3358.4	3367.3	3378.9	3391.1	3404.1	3417.7	3432.1	3447.3	3463.4	3480.5
	H-H0	4682.4	4698.5	4772.3	4869.1	4971.2	5078.9	5192.6	5312.7	5439.7	5573.8	5715.8
	(S-S0)/R	3.1170	0.8078	-0.8311	-1.5619	-2.0058	-2.3329	-2.5963	-2.8190	-3.0162	-3.1930	-3.3551
960.	U-U0	3460.3	3462.3	3471.4	3483.4	3496.0	3509.3	3523.3	3538.2	3553.8	3570.4	3587.9
	H-H0	4825.9	4842.4	4917.7	5016.3	5120.4	5230.1	5346.1	5468.4	5597.7	5734.4	5878.0
	(S-S0)/R	3.1720	0.8629	-0.7759	-1.5065	-1.9503	-2.2771	-2.5403	-2.7637	-2.9600	-3.1363	-3.2981
980.	U-U0	3564.4	3566.5	3575.9	3588.2	3601.1	3614.8	3629.3	3644.5	3660.6	3677.6	3695.6
	H-H0	4969.8	4986.6	5063.3	5163.8	5269.8	5381.7	5499.7	5624.4	5756.0	5895.2	6042.3
	(S-S0)/R	3.2260	0.9169	-0.7217	-1.4521	-1.8957	-2.2223	-2.4853	-2.7085	-2.9044	-3.0807	-3.2422
1000.	U-U0	3668.9	3671.0	3680.6	3693.3	3706.6	3720.7	3735.5	3751.2	3767.7	3785.2	3803.7
	H-H0	5114.0	5131.1	5209.2	5311.6	5419.6	5533.5	5653.7	5780.6	5914.6	6056.2	6205.9
	(S-S0)/R	3.2791	0.9701	-0.6684	-1.3987	-1.8420	-2.1685	-2.4313	-2.6542	-2.8499	-3.0260	-3.1873

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREES K)		DENSITY(AMAGAT)										
		500.	550.	600.	650.	700.	750.	800.	850.	900.	950.	1000.
500.	U-U0	1170.5	1176.6	1183.3	1189.9	1197.2	1205.6	1214.4	1222.9	1231.9	1241.9	1252.8
	H-H0	2227.5	2316.7	2411.6	2512.7	2620.4	2735.1	2857.6	2988.2	3127.9	3277.1	3436.8
	(S-S0)/R	-5.1856	-5.3363	-5.4810	-5.6206	-5.7561	-5.8864	-6.0184	-6.1460	-6.2735	-6.3998	-6.5258
520.	U-U0	1275.4	1282.1	1289.2	1296.8	1304.9	1313.4	1322.8	1332.6	1343.3	1354.3	1366.2
	H-H0	2393.9	2484.7	2585.4	2690.4	2802.3	2921.5	3048.7	3184.4	3329.4	3484.3	3650.9
	(S-S0)/R	-5.0814	-5.2321	-5.3762	-5.5150	-5.6497	-5.7813	-5.9105	-6.0376	-6.1636	-6.2888	-6.4136
540.	U-U0	1380.3	1387.6	1395.5	1403.8	1412.7	1422.1	1432.2	1443.0	1454.4	1466.7	1479.8
	H-H0	2560.1	2654.4	2758.0	2867.7	2985.6	3113.4	3239.7	3378.9	3530.1	3694.8	3862.2
	(S-S0)/R	-4.9812	-5.1318	-5.2792	-5.4130	-5.5474	-5.6761	-5.8064	-5.9336	-6.0578	-6.1821	-6.3058
560.	U-U0	1485.2	1493.2	1501.7	1510.8	1520.4	1530.7	1541.6	1553.3	1565.7	1579.0	1593.2
	H-H0	2726.1	2825.4	2931.9	3044.7	3164.8	3292.8	3429.2	3574.8	3730.1	3896.1	4073.9
	(S-S0)/R	-4.8851	-5.0352	-5.1780	-5.3155	-5.4480	-5.5778	-5.7064	-5.8328	-5.9580	-6.0792	-6.2026
580.	U-U0	1590.7	1598.4	1608.2	1617.7	1628.1	1639.2	1651.0	1663.5	1676.9	1691.3	1706.8
	H-H0	2891.9	2995.1	3104.7	3221.3	3345.9	3477.7	3618.7	3768.6	3929.0	4100.8	4285.4
	(S-S0)/R	-4.7930	-4.9417	-5.0841	-5.2210	-5.3536	-5.4827	-5.6097	-5.7344	-5.8577	-5.9801	-6.1019
600.	U-U0	1695.2	1704.6	1714.3	1724.7	1735.8	1747.7	1760.3	1773.8	1788.1	1803.5	1819.8
	H-H0	3057.6	3164.1	3277.3	3397.7	3525.8	3662.3	3807.7	3962.7	4128.1	4304.8	4493.5
	(S-S0)/R	-4.7024	-4.8518	-4.9934	-5.1297	-5.2617	-5.3903	-5.5165	-5.6403	-5.7628	-5.8844	-6.0053
620.	U-U0	1800.3	1810.1	1820.6	1831.7	1843.6	1856.2	1869.7	1884.0	1899.3	1915.6	1933.1
	H-H0	3223.0	3332.9	3449.6	3573.7	3705.8	3846.4	3996.2	4155.9	4326.2	4506.1	4702.4
	(S-S0)/R	-4.6147	-4.7646	-4.9057	-5.0414	-5.1728	-5.3008	-5.4261	-5.5493	-5.6711	-5.7918	-5.9116
640.	U-U0	1905.4	1915.8	1927.0	1938.8	1951.4	1964.8	1979.1	1994.3	2010.5	2027.8	2046.3
	H-H0	3388.4	3501.5	3621.7	3749.6	3885.5	4030.2	4184.3	4348.6	4523.7	4710.7	4910.4
	(S-S0)/R	-4.5327	-4.6801	-4.8207	-4.9558	-5.0866	-5.2140	-5.3387	-5.4612	-5.5822	-5.7021	-5.8213
660.	U-U0	2010.6	2021.6	2033.4	2045.9	2059.2	2073.4	2088.5	2104.5	2121.7	[illegible]	2159.4
	H-H0	3553.4	3670.0	3795.7	3925.1	4064.9	4213.6	4372.6	4540.8	4720.7	4912.7	5117.7
	(S-S0)/R	-4.4512	-4.5981	-4.7382	-4.8728	-5.0031	-5.1299	-5.2539	-5.3758	-5.4961	-5.6153	-5.7337
680.	U-U0	2115.8	2127.5	2139.9	2153.1	2167.1	2182.0	2197.9	2214.8	2232.8	2252.1	2272.6
	H-H0	3718.7	3838.4	3965.5	4100.5	4244.0	4396.5	4559.4	4732.6	4917.3	5114.2	5324.5
	(S-S0)/R	-4.3721	-4.5186	-4.6582	-4.7923	-4.9220	-5.0482	-5.1717	-5.2930	-5.4126	-5.5310	-5.6486
700.	U-U0	2221.2	2233.5	2246.5	2260.4	2275.1	2290.7	2307.4	2325.2	2344.1	2364.3	2385.8
	H-H0	3883.8	4006.6	4137.1	4275.7	4423.2	4579.7	4746.4	4924.0	5113.3	5315.2	5530.6
	(S-S0)/R	-4.2952	-4.4413	-4.5804	-4.7142	-4.8433	-4.9689	-5.0918	-5.2124	-5.3314	-5.4492	-5.5661
720.	U-U0	2326.7	2339.5	2353.2	2367.7	2383.1	2399.5	2417.0	2435.6	2455.4	2476.5	2498.8
	H-H0	4048.6	4174.8	4308.6	4452.3	4601.7	4762.1	4933.2	5115.1	5309.6	5515.6	5736.2
	(S-S0)/R	-4.2284	-4.3661	-4.5048	-4.6379	-4.7666	-4.8918	-5.0141	-5.1342	-5.2525	-5.3694	-5.4854
740.	U-U0	2432.3	2445.7	2460.0	2475.2	2491.3	2508.4	2526.7	2546.1	2566.7	2588.8	2612.3
	H-H0	4213.8	4342.9	4480.9	4625.6	4780.2	4944.7	5119.6	5305.8	5504.2	5715.7	5941.2
	(S-S0)/R	-4.1476	-4.2928	-4.4311	-4.5630	-4.6920	-4.8167	-4.9382	-5.0580	-5.1757	-5.2922	-5.4077
760.	U-U0	2538.0	2552.1	2567.8	2582.6	2599.6	2617.6	2636.9	2656.6	2678.2	2701.1	2725.6
	H-H0	4378.7	4511.0	4651.3	4800.2	4958.6	5126.9	5305.8	5496.3	5699.1	5915.3	6145.8
	(S-S0)/R	-4.0766	-4.2214	-4.3593	-4.4919	-4.6194	-4.7435	-4.8648	-4.9837	-5.1009	-5.2167	-5.3316
780.	U-U0	2643.9	2658.5	2674.6	2691.5	2709.0	2728.6	2748.3	2767.3	2789.7	2813.5	2839.0
	H-H0	4543.7	4679.9	4822.6	4975.8	5136.9	5308.9	5491.0	5686.5	5893.7	6114.5	6349.8
	(S-S0)/R	-4.0074	-4.1518	-4.2893	-4.4211	-4.5485	-4.6722	-4.7929	-4.9114	-5.0280	-5.1432	-5.2575
800.	U-U0	2750.0	2765.2	2781.3	2798.4	2816.5	2835.8	2856.3	2878.1	2901.4	2926.1	2952.5
	H-H0	4708.7	4847.1	4993.9	5149.6	5315.1	5490.8	5677.7	5876.4	6088.0	6315.4	6555.7
	(S-S0)/R	-3.9396	-4.0839	-4.2209	-4.3524	-4.4793	-4.6025	-4.7228	-4.8407	-4.9566	-5.0713	-5.1852
820.	U-U0	2856.2	2872.0	2888.7	2906.4	2925.3	2945.2	2966.5	2989.1	3013.2	3038.8	3066.1
	H-H0	4873.7	5015.2	5165.1	5324.2	5493.2	5672.6	5863.3	6066.2	6282.1	6512.0	6757.0
	(S-S0)/R	-3.8737	-4.0175	-4.1542	-4.2852	-4.4117	-4.5345	-4.6543	-4.7718	-4.8873	-5.0015	-5.1145
840.	U-U0	2962.7	2978.8	2996.3	3014.7	3034.2	3054.8	3076.8	3100.2	3125.1	3151.6	3179.8
	H-H0	5038.9	5183.3	5336.4	5498.8	5671.2	5854.3	6048.9	6255.8	6475.9	6710.3	6960.1
	(S-S0)/R	-3.8092	-3.9526	-4.0889	-4.2196	-4.3457	-4.4680	-4.5874	-4.7044	-4.8194	-4.9333	-5.0455
860.	U-U0	3069.4	3086.2	3104.1	3123.1	3143.3	3164.6	3187.4	3211.5	3237.7	3264.4	3293.7
	H-H0	5204.0	5351.6	5507.0	5673.4	5849.2	6035.4	6234.3	6445.3	6669.6	6908.4	7162.8
	(S-S0)/R	-3.7460	-3.8891	-4.0250	-4.1553	-4.2810	-4.4030	-4.5219	-4.6384	-4.7530	-4.8661	-4.9781
880.	U-U0	3176.3	3193.7	3212.2	3231.8	3252.6	3274.6	3298.1	3323.9	3349.5	3377.3	3407.7
	H-H0	5369.5	5519.7	5679.0	5847.9	6027.2	6217.5	6419.7	6634.5	6863.1	7106.3	7365.2
	(S-S0)/R	-3.6841	-3.8269	-3.9625	-4.0925	-4.2178	-4.3394	-4.4579	-4.5739	-4.6880	-4.8006	-4.9121
900.	U-U0	3283.4	3301.4	3320.5	3340.7	3362.1	3384.9	3409.0	3434.7	3462.0	3491.0	3522.3
	H-H0	5534.8	5688.0	5850.4	6022.6	6205.2	6399.1	6605.0	6823.8	7056.4	7303.9	7567.5
	(S-S0)/R	-3.6235	-3.7660	-3.9013	-4.0309	-4.1558	-4.2770	-4.3951	-4.5108	-4.6244	-4.7365	-4.8475
920.	U-U0	3390.8	3409.3	3429.0	3449.8	3471.8	3495.3	3520.2	3546.6	3574.7	3604.6	3636.4
	H-H0	5700.3	5856.5	6021.9	6197.3	6383.3	6580.6	6791.2	7012.5	7249.0	7501.6	7769.5
	(S-S0)/R	-3.5641	-3.7062	-3.8412	-3.9705	-4.0951	-4.2159	-4.3336	-4.4488	-4.5621	-4.6737	-4.7842
940.	U-U0	3498.5	3517.6	3537.8	3559.2	3581.9	3606.0	3631.6	3658.8	3687.6	3718.3	3751.0
	H-H0	5866.0	6025.1	6193.9	6372.0	6561.4	6762.2	6975.5	7202.0	7442.0	7698.8	7971.3
	(S-S0)/R	-3.5058	-3.6476	-3.7823	-3.9113	-4.0355	-4.1560	-4.2733	-4.3881	-4.5009	-4.6121	-4.7221
960.	U-U0	3606.4	3626.1	3646.8	3668.8	3692.2	3717.0	3743.4	3771.1	3800.6	3832.3	3865.9
	H-H0	6031.0	6193.6	6365.2	6546.0	6739.5	6945.0	7166.7	7391.1	7635.8	7896.1	8173.0
	(S-S0)/R	-3.4486	-3.5902	-3.7249	-3.8532	-3.9771	-4.0972	-4.2141	-4.3280	-4.4410	-4.5517	-4.6612
980.	U-U0	3714.7	3734.6	3756.2	3778.8	3802.8	3828.2	3855.6	3883.8	3914.2	3946.6	3981.0
	H-H0	6198.0	6362.7	6537.1	6721.9	6917.8	7125.6	[illegible]	7580.1	7828.8	8091.2	8374.5
	(S-S0)/R	-3.3924	-3.5337	-3.6678	-3.7961	-3.9197	-4.0394	[illegible]	-4.2701	-4.3821	-4.4924	-4.6015
1000	U-U0	3823.7	3843.4	3865.8	3889.0	3913.6	3939.7	[illegible]	3996.7	4027.0	4061.1	4096.3
	H-H0	6364.2	6531.4	6709.2	6897.3	7096.2	7307.5	[illegible]	7769.2	8021.8	[illegible]	8575.9
	(S-S0)/R	-3.3372	-3.4782	-3.6120	-3.7400	-3.8633	-3.9827	[illegible]	-4.2127	-4.3243	-4.4347	-4.5429

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREES K)		DENSITY(AMAGAT)										
		1050.	1100.	1150.	1200.	1250.	1300.	1350.	1400.	1450.	1500.	1550.
500.	U-U0	1264.4	1276.9	1290.2	1304.4	1320.0	1336.6	1354.5	1373.1	1394.4	1416.6	1441.0
	H-H0	3667.8	3796.9	3987.6	4199.5	4425.1	4668.8	4931.1	5215.7	5518.5	5867.6	[illegible]
	(S-S0)/R	-6.6519	-6.7784	-6.9358	-7.0363	-7.1643	-7.2861	-7.4206	-7.5661	-7.7056	-7.8469	-7.9821
520.	U-U0	1379.2	1393.2	1407.7	1423.5	1440.6	1458.8	1478.5	1499.7	1522.6	1547.2	1573.9
	H-H0	3827.4	4017.3	4241.2	4459.8	4674.7	4927.2	5190.9	5491.5	5807.1	6147.6	6515.0
	(S-S0)/R	-6.5385	-6.6636	-6.7898	-6.9149	-7.0453	-7.1754	-7.3074	-7.4457	-7.5785	-7.7482	-7.8816
540.	U-U0	1493.9	1508.9	1525.5	1542.3	1561.9	1580.8	1600.3	1625.4	1650.4	1677.2	1706.3
	H-H0	4045.9	4242.6	4453.5	4679.7	4922.6	5183.7	5464.5	5766.9	6092.8	6444.5	6824.4
	(S-S0)/R	-6.4260	-6.5537	-6.6784	-6.8041	-6.9318	-7.0595	-7.1980	-7.3323	-7.4871	-7.6482	-7.7992
560.	U-U0	1608.5	1624.7	1642.2	1660.0	1681.8	1702.8	1725.9	1750.9	1777.8	1806.2	1838.2
	H-H0	4263.4	4466.6	4684.5	4918.1	5168.9	5438.5	5726.1	6049.0	6376.1	6739.6	7130.1
	(S-S0)/R	-6.3247	-6.4476	-6.5711	-6.6955	-6.8216	-6.9488	-7.0767	-7.2074	-7.3404	-7.4763	-7.6144
580.	U-U0	1722.9	1740.5	1759.3	1779.4	1801.1	1824.7	1849.2	1876.3	1904.9	1934.1	1969.5
	H-H0	4479.8	4689.5	4914.1	5155.0	5413.5	5691.1	5987.6	6310.8	6656.8	7026.9	7412.5
	(S-S0)/R	-6.2236	-6.3454	-6.4677	-6.5908	-6.7151	-6.8406	-6.9676	-7.0969	-7.2281	-7.3648	-7.4982
600.	U-U0	1837.4	1856.1	1876.2	1897.7	1920.8	1945.6	1972.5	2000.9	2031.6	2065.1	2101.6
	H-H0	4695.3	4912.5	5142.6	5390.6	5656.0	5942.5	6249.3	6579.6	6939.7	7328.5	7742.2
	(S-S0)/R	-6.1259	-6.2467	-6.3679	-6.4899	-6.6128	-6.7376	-6.8638	-6.9903	-7.1209	-7.2548	-7.3867
620.	U-U0	1951.7	1971.7	1993.0	2015.9	2041.5	2068.0	2095.2	2125.6	2158.4	2191.7	2231.6
	H-H0	4910.0	5132.1	5370.0	5624.9	5896.4	6189.8	6507.2	6846.3	7211.4	7604.8	8028.1
	(S-S0)/R	-6.0318	-6.1514	-6.2715	-6.3923	-6.5141	-6.6378	-6.7614	-6.8874	-7.0154	-7.1458	-7.2783
640.	U-U0	2066.8	2087.2	2109.8	2134.0	2160.6	2187.9	2217.8	2255.6	2284.7	[illegible]	[illegible]
	H-H0	5123.8	5352.0	5596.3	5858.1	6138.7	6438.9	6763.4	7111.2	7485.5	7888.6	8323.4
	(S-S0)/R	-5.9402	-6.0591	-6.1782	-6.2980	-6.4185	-6.5403	-6.6635	-6.7880	-6.9145	-7.0441	-7.1740
660.	U-U0	2180.3	2202.6	2226.4	2252.0	2279.6	2308.8	2342.3	2374.2	2410.7	[illegible]	2492.3
	H-H0	5336.8	5571.0	5821.6	6090.1	6377.9	6686.6	7018.1	7374.3	7757.6	[illegible]	8615.2
	(S-S0)/R	-5.8517	-5.9697	-6.0878	-6.2066	-6.3261	-6.4460	-6.5684	-6.6918	-6.8169	-6.9449	-7.0732
680.	U-U0	2294.5	2318.3	2343.1	2369.9	2398.7	2429.6	[illegible]	2498.3	2536.6	2577.6	[illegible]
	H-H0	5549.1	5789.2	6046.0	6321.1	6615.6	6935.9	7271.2	7635.8	8027.9	8440.9	8914.8
	(S-S0)/R	-5.7658	-5.8829	-6.0007	-6.1179	-6.2384	-6.3558	-6.4765	-6.5906	-6.7223	-6.8479	-6.9795
700.	U-U0	2408.8	2433.4	2459.6	2487.8	2517.9	2550.2	2584.9	2622.2	2662.2	[illegible]	2751.7
	H-H0	5760.7	6006.7	6269.5	6551.0	6852.6	7176.2	7523.6	7895.7	8296.4	8727.6	9192.1
	(S-S0)/R	-5.6825	-5.7988	-5.9151	-6.0319	-6.1494	-6.2678	-6.3873	-6.5082	-6.6306	-6.7549	-6.8811
720.	U-U0	2523.0	2548.7	2576.2	2605.6	2637.1	2670.8	2707.3	2745.9	2787.7	[illegible]	2881.1
	H-H0	5971.6	6223.2	6492.2	6780.1	7088.4	7418.8	7773.4	8154.1	8563.2	9004.4	9477.4
	(S-S0)/R	-5.6015	-5.7169	-5.8325	-5.9484	-6.0649	-6.1823	-6.3007	-6.4204	-6.5416	-6.6646	-6.7894
740.	U-U0	2637.3	2664.1	2692.8	2723.4	2756.2	2791.4	2829.1	2869.6	2913.1	2959.8	[illegible]
	H-H0	6182.0	6438.2	6714.1	7008.2	7323.1	7660.6	8024.5	8411.3	8828.5	9277.4	[illegible]
	(S-S0)/R	-5.5220	-5.6374	-5.7521	-5.8671	-5.9827	-6.0991	-6.2165	-6.3351	-6.4552	-6.5769	-6.7004
760.	U-U0	2751.7	2779.6	2809.4	2841.2	2875.3	2911.9	2951.3	2993.1	3038.5	[illegible]	[illegible]
	H-H0	6391.8	6654.9	6935.2	7235.5	7558.9	7901.3	8274.9	8666.7	9092.2	[illegible]	10042.
	(S-S0)/R	-5.4459	-5.5599	-5.6738	-5.7881	-5.9028	-6.0182	-6.1346	-6.2522	-6.3711	-6.4916	-6.6138
780.	U-U0	2866.3	2895.0	2926.0	2959.1	2994.5	3032.8	3073.6	3118.6	3165.4	[illegible]	3267.9
	H-H0	6601.1	6869.2	7155.7	7462.1	7789.9	8141.8	8517.3	8921.1	9354.6	[illegible]	10322.
	(S-S0)/R	-5.3711	-5.4844	-5.5976	-5.7118	-5.8269	-5.9395	-6.0569	-6.1715	-6.2893	-6.4088	-6.5297
800.	U-U0	2980.6	3010.6	3042.7	3076.9	3113.4	3152.9	3194.9	3240.6	3288.5	3341.5	3396.5
	H-H0	6809.9	7083.4	7375.6	7687.9	8022.0	8379.6	8764.1	9175.5	9615.6	10090.	10600.
	(S-S0)/R	-5.2981	-5.4107	-5.5232	-5.6359	-5.7498	-5.8627	-5.9772	-6.0928	-6.2096	-6.3278	-6.4477
820.	U-U0	3095.2	3126.2	3159.4	3195.0	3232.8	3273.4	3316.6	3363.5	3413.5	[illegible]	[illegible]
	H-H0	7018.3	[illegible]	7594.8	7913.6	8255.4	8617.7	9006.9	9426.4	9875.4	10354.	[illegible]
	(S-S0)/R	-5.2269	-5.3389	-5.4507	-5.5626	-5.6749	-5.7878	-5.9016	-6.0161	-6.1319	-6.2492	-6.3678
840.	U-U0	3209.9	3242.0	3276.5	3312.9	3352.0	3393.9	3438.8	3486.6	3538.5	[illegible]	[illegible]
	H-H0	7226.3	7516.3	7813.6	8137.6	8484.0	8854.8	9251.8	9677.4	10134.	10624.	11151.
	(S-S0)/R	-5.1573	-5.2686	-5.3798	-5.4910	-5.6026	-5.7147	-5.8275	-5.9412	-6.0561	-6.1723	-6.2899
860.	U-U0	3324.7	3357.9	3393.2	3431.0	3471.3	3514.9	3560.8	3610.3	3663.5	[illegible]	3781.8
	H-H0	7433.9	7723.1	8031.8	8361.5	8714.0	9091.1	9494.8	9927.9	10391.	[illegible]	11425.
	(S-S0)/R	-5.0893	-5.2003	-5.3105	-5.4211	-5.5319	-5.6432	-5.7552	-5.8681	-5.9821	[illegible]	-6.2139
880.	U-U0	3439.7	3473.9	3510.3	3549.2	3590.8	3635.2	3682.8	3733.8	3788.4	[illegible]	[illegible]
	H-H0	7641.2	7935.7	8249.5	8584.9	8943.3	9326.7	[illegible]	10177.	10648.	11154.	11697.
	(S-S0)/R	-5.0227	-5.1329	-5.2428	-5.3527	-5.4628	-5.5734	-5.6846	-5.7967	-5.9097	[illegible]	-6.1398
900.	U-U0	3554.9	3590.1	3627.5	3667.5	3710.3	3756.0	3804.9	3857.3	3913.5	[illegible]	4038.4
	H-H0	7848.2	8147.5	8466.9	8807.8	9172.1	9561.6	9978.4	10425.	10903.	[illegible]	11968.
	(S-S0)/R	-4.9576	-5.0672	-5.1765	-5.2857	-5.3952	-5.5051	-5.6155	-5.7268	-5.8388	-5.9524	[illegible]
920.	U-U0	3670.3	3706.4	3746.9	3786.0	3830.0	3876.9	[illegible]	3982.9	4038.6	[illegible]	4166.8
	H-H0	8055.0	8359.3	8683.8	9030.3	9401.3	9795.9	10219.	10672.	11158.	[illegible]	[illegible]
	(S-S0)/R	-4.8930	-5.0028	-5.1119	-5.2202	-5.3290	-5.4382	-5.5479	-5.6584	-5.7698	-5.8822	-5.9961
940.	U-U0	3785.8	3822.9	3862.5	3904.7	3949.8	3998.3	4050.5	4106.6	[illegible]	[illegible]	[illegible]
	H-H0	8261.5	8570.7	8900.4	9252.3	9628.0	10030.	10459.	10919.	11412.	[illegible]	[illegible]
	(S-S0)/R	-4.8312	-4.9391	-5.0470	-5.1550	-5.2641	-5.3726	-5.4816	-5.5914	-5.7021	[illegible]	-5.9266
960.	U-U0	3901.6	3938.7	3980.3	4023.6	4069.8	4118.7	[illegible]	4228.9	[illegible]	[illegible]	[illegible]
	H-H0	8467.8	8781.6	9118.7	9471.9	9855.3	10263.	[illegible]	11169.	11664.	[illegible]	[illegible]
	(S-S0)/R	-4.7609	-4.8678	-4.9755	-5.0828	-5.2005	-5.3084	[illegible]	-5.5250	-5.6357	[illegible]	[illegible]
980.	U-U0	4017.6	4056.0	4098.2	[illegible]	[illegible]	4240.5	[illegible]	4352.4	[illegible]	[illegible]	[illegible]
	H-H0	8673.9	[illegible]	9332.6	9695.7	10082.	10498.	[illegible]	11410.	11916.	[illegible]	[illegible]
	(S-S0)/R	-4.7096	-4.8171	-4.9242	-5.0312	-5.1382	-5.2454	-5.3531	-5.4615	[illegible]	[illegible]	[illegible]
1000	U-U0	4133.9	4173.0	4216.4	4261.8	4311.3	[illegible]	[illegible]	4476.5	4539.0	[illegible]	[illegible]
	H-H0	8879.8	9203.5	9548.3	[illegible]	10309.	10728.	[illegible]	11655.	12168.	[illegible]	[illegible]
	(S-S0)/R	-4.6585	-4.7575	-4.8641	-4.9735	[illegible]	-5.1836	[illegible]	-5.3984	[illegible]	[illegible]	[illegible]

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT) 1600.	1650.	1700.	1750	1800.	1850.	1900.	1950.	2000.
500.	U-U0	1447.2	1493.0	1526.9	1559.6	1596.1	1635.7	1678.0	1724.3	1777.1
	H-H0	6588.1	7035.1	7457.4	7948.6	8462.7	9084.4	9698.7	10341.	11169.
	(S-S0)/R	-8.1910	-8.2930	-8.4509	-8.6128	-8.7707	-8.9522	-9.1395	-9.3153	-9.5869
520.	U-U0	1602.7	1633.8	1667.8	1704.5	1744.5	1787.9	1835.3	1887.1	1943.7
	H-H0	6913.6	7366.5	7812.0	8319.4	8871.0	9471.4	10149.	10849.	11621.
	(S-S0)/R	-8.0072	-8.1572	-8.3113	-8.4659	-8.6333	-8.8019	-8.9742	-9.1903	-9.3437
540.	U-U0	1737.7	1771.7	1808.3	1848.5	1892.0	1939.3	1990.7	2047.0	2108.4
	H-H0	7235.2	7679.8	8161.8	8684.9	9253.5	9871.7	10546.	11281.	12084.
	(S-S0)/R	-7.8769	-8.0284	-8.1774	-8.3331	-8.4932	-8.6582	-8.8434	-9.0094	-9.1885
560	U-U0	1872.2	1908.9	1948.0	1991.0	2038.0	2088.4	2142.1	2205.7	2271.6
	H-H0	7553.1	8011.6	8587.2	9045.4	9635.0	10266.	10978.	11714	12539.
	(S-S0)/R	-7.7559	-7.9066	-8.0403	-8.2019	-8.3589	-8.5209	-8.6871	-8.8591	-9.0349
580.	U-U0	2006.2	2049.9	2088.2	2134.4	2184.0	2239.1	2299.5	2363.3	2434.0
	H-H0	7867.7	8338.4	8848.2	9401.1	10061.	10654.	11384	12139.	12985.
	(S-S0)/R	-7.6375	-7.7860	-7.9261	-8.0760	-8.2109	-8.3880	-8.5730	-8.7198	-8.8934
600.	U-U0	2139.8	2181.7	2227.1	2276.3	2329.8	2387.0	2451.0	2519.1	2595.0
	H-H0	8179.0	8662.2	9185.3	9752.4	10368.	11037.	11764.	12558.	13423.
	(S-S0)/R	-7.5239	-7.6638	-7.8039	-7.9549	-8.1065	-8.2615	-8.4219	-8.5843	-8.7561
620.	U-U0	2272.9	2317.4	2365.9	2417.7	2474.2	2535.7	2602.9	2679.4	2754.8
	H-H0	8487.3	8982.4	9518.4	10099.	10735.	11414.	12179.	12970.	13854.
	(S-S0)/R	-7.4130	-7.5514	-7.6933	-7.8382	-7.9880	-8.1395	-8.2984	-8.4979	-8.6243
640.	U-U0	2405.7	2452.6	2503.4	2558.4	2618.0	2682.8	2753.3	2828.9	2913.5
	H-H0	8792.4	9298.7	9848.3	10443.	11087.	11787.	12547.	13378.	14278.
	(S-S0)/R	-7.3079	-7.4438	-7.5831	-7.7257	-7.8719	-8.0219	-8.1786	-8.3344	-8.4975
660.	U-U0	2538.0	2587.4	2640.8	2698.6	2761.2	2829.2	2903.1	2983.6	3071.7
	H-H0	9095.2	9613.9	10175.	10782.	11440.	12159.	12931.	13774.	14697.
	(S-S0)/R	-7.2050	-7.3394	-7.4767	-7.6172	-7.7610	-7.9085	-8.0599	-8.2154	-8.3753
680.	U-U0	2670.1	2721.9	2777.7	2838.2	2903.8	2975.0	3052.3	3138.4	3228.0
	H-H0	9395.3	9925.1	10498.	11118.	11789.	12518.	13310.	14171.	15139.
	(S-S0)/R	-7.1058	-7.2384	-7.3738	-7.5122	-7.6539	-7.7996	-7.9478	-8.1006	-8.2576
700.	U-U0	2801.8	2855.9	2914.3	2977.4	3045.9	3120.1	3200.7	3288.3	3383.8
	H-H0	9693.8	10234.	10818.	11450.	12135.	12877.	13684.	14561.	15515.
	(S-S0)/R	-7.0090	-7.1400	-7.2742	-7.4106	-7.5502	-7.6931	-7.8395	-7.9897	-8.1439
720.	U-U0	2933.3	2989.6	3050.4	3116.2	3187.4	3264.6	3348.6	3439.5	3538.3
	H-H0	9988.3	10540.	11135.	11779.	12477.	13233.	14054.	14946.	15916.
	(S-S0)/R	-6.9164	-7.0458	-7.1776	-7.3123	-7.4498	-7.5906	-7.7347	-7.8825	-8.0343
740.	U-U0	3064.4	3123.0	3186.2	3254.9	3328.5	3408.4	3495.6	3590.0	3692.8
	H-H0	10281.	10845.	11450.	12100.	12815.	13585.	14419.	15326.	16312.
	(S-S0)/R	-6.8268	-6.9538	-7.0840	-7.2169	-7.3528	-7.4913	-7.6333	-7.7787	-7.9277
760.	U-U0	3195.4	3256.1	3321.6	3392.4	3469.1	3552.1	3642.1	3739.8	3846.1
	H-H0	10572.	11144.	11762.	12429.	13151.	13933.	14781.	15702.	16704.
	(S-S0)/R	-6.7380	-6.8646	-6.9931	-7.1243	-7.2582	-7.3950	-7.5349	-7.6781	-7.8246
780.	U-U0	3326.2	3389.0	3456.8	3530.1	3609.3	3695.1	3788.1	3889.2	3998.8
	H-H0	10862.	11443.	12071.	12750.	13483.	14270.	15129.	16074.	17090.
	(S-S0)/R	-6.6520	-6.7775	-6.9047	-7.0343	-7.1665	-7.3015	-7.4395	-7.5806	-7.7250
800.	U-U0	3456.7	3521.7	3591.7	3667.3	3749.1	3837.6	3933.6	4037.7	4150.7
	H-H0	11140.	11740.	12370.	13068.	13813.	14620.	15494.	16442.	17473.
	(S-S0)/R	-6.5693	-6.6929	-6.8187	-6.9468	-7.0776	-7.2108	-7.3468	-7.4858	-7.6282
820.	U-U0	3587.2	3654.2	3726.4	3804.4	3888.6	3979.8	4078.6	4185.7	4302.1
	H-H0	11434.	12036.	12684.	13380.	14140.	14959.	15844.	16807.	17851.
	(S-S0)/R	-6.4883	-6.6108	-6.7352	-6.8618	-6.9907	-7.1223	-7.2566	-7.3938	-7.5341
840.	U-U0	3717.5	3786.5	3860.9	3941.1	4027.8	4121.6	4222.7	4333.3	4452.9
	H-H0	11718.	12329.	12987.	13697.	14465.	15295.	16193.	17160.	18226.
	(S-S0)/R	-6.4092	-6.5303	-6.6534	-6.7787	-6.9062	-7.0363	-7.1689	-7.3043	-7.4426
860.	U-U0	3847.7	3918.7	3995.2	4077.7	4166.8	4263.1	4367.4	4480.5	4603.1
	H-H0	12000.	12620.	13290.	14009.	14787.	15628.	16530.	17526.	18597.
	(S-S0)/R	-6.3321	-6.4520	-6.5739	-6.6978	-6.8239	-6.9524	-7.0835	-7.2171	-7.3534
880.	U-U0	3977.9	4050.0	4129.3	4214.4	4305.9	4404.4	4511.3	4627.2	4752.9
	H-H0	12281.	12910.	13587.	14318.	15106.	15959.	16881.	17880.	18964.
	(S-S0)/R	-6.2564	-6.3756	-6.4962	-6.6189	-6.7437	-6.8707	-7.0002	-7.1322	-7.2676
900.	U-U0	4108.0	4182.6	4263.4	4350.3	4444.0	4545.3	4654.9	4773.6	4902.7
	H-H0	12561.	13190.	13889.	14625.	15424.	16287.	17221.	18232.	19328.
	(S-S0)/R	-6.1832	-6.3009	-6.4204	-6.5418	-6.6653	-6.7910	-6.9190	-7.0494	-7.1825
920.	U-U0	4238.1	4314.0	4397.5	4486.1	4582.4	4686.1	4798.2	4919.6	5051.2
	H-H0	12830.	13465.	14181.	14931.	15740.	16613.	17558.	18581.	19698.
	(S-S0)/R	-6.1112	-6.2279	-6.3463	-6.4666	-6.5888	-6.7131	-6.8397	-6.9687	-7.1001
940.	U-U0	4368.2	4446.7	4531.2	4622.3	4720.5	4826.6	4941.2	5065.3	5199.7
	H-H0	13116.	13778.	14479.	15234.	16053.	16937.	17893.	18927.	20048.
	(S-S0)/R	-6.0408	-6.1565	-6.2738	-6.3930	-6.5146	-6.6378	-6.7623	-6.8898	-7.0197
960.	U-U0	4498.3	4578.0	4665.1	4758.2	4858.4	4967.0	5084.1	5210.8	5348.0
	H-H0	13391.	14054.	14768.	15536	16369.	17259.	18229.	19271.	20403
	(S-S0)/R	-5.9718	-6.0866	-6.2029	-6.3209	-6.4408	-6.5626	-6.6866	-6.8127	-6.9411
980.	U-U0	4628.4	4710.0	4798.9	4894.0	4996.6	5107.2	5226.7	5356.0	5495.9
	H-H0	13660.	14337.	15059.	15837.	16675.	17579.	18556	19612.	20758
	(S-S0)/R	-5.9043	-6.0181	-6.1334	-6.2504	-6.3692	-6.4899	-6.6125	-6.7373	-6.8643
1000.	U-U0	4758.6	4842.5	4932.7	5029.8	5134.5	5247.4	5369.2	5501.0	5643.6
	H-H0	13930	14619.	15349.	16136.	16983.	17897.	18884	19951.	21106
	(S-S0)/R	-5.8381	-5.9510	-6.0654	-6.1814	-6.2991	-6.4184	-6.5401	-6.6636	-6.7892

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT)										
		1.	10.	50.	100.	150.	200.	250.	300.	350.	400.	450.
1020.	U-U0	3773.6	3775.6	3785.7	3798.7	3812.4	3826.6	3842.5	3859.2	3875.1	3893.1	3912.1
	H-H0	5258.5	5276.3	5355.5	5459.8	5569.7	5685.6	5807.9	5937.1	6073.4	6217.4	6368.7
	(S-S0)/R	3.3324	1.0223	-0.6168	-1.3461	-1.7893	-2.1154	-2.3782	-2.6009	-2.7964	-2.9722	-3.1333
1040.	U-U0	3878.6	3881.2	3891.2	3904.5	3918.0	3933.4	3949.4	3965.5	[illegible]	[illegible]	4020.8
	H-H0	5405.4	5421.7	5502.2	5608.5	5724.2	5838.1	5962.5	6093.8	6232.5	6379.4	6533.7
	(S-S0)/R	3.3827	1.0737	-0.5645	-1.2944	-1.7374	-2.0635	-2.3259	-2.5484	-2.7437	-2.9193	-3.0801
1060.	U-U0	3984.3	3986.9	3997.6	4010.6	4025.0	4040.2	4056.3	4073.2	4091.8	4109.9	4129.6
	H-H0	5548.7	5566.7	5649.1	5757.1	5878.9	5990.8	6117.4	6250.0	6391.0	6541.7	6698.9
	(S-S0)/R	3.4333	1.1240	-0.5138	-1.2439	-1.6867	-2.0123	-2.2745	-2.4968	-2.6919	-2.8672	-3.0278
1080.	U-U0	4090.3	4092.4	4103.1	4117.1	4131.9	4147.5	4163.9	4181.2	4199.5	4218.8	4239.2
	H-H0	5694.3	5712.6	5796.4	5906.2	6025.9	6143.9	6272.9	6408.3	6551.5	6702.6	6862.6
	(S-S0)/R	3.4831	1.1742	-0.4638	-1.1934	-1.6361	-1.9618	-2.2239	-2.4468	-2.6408	-2.8147	-2.9764
1100.	U-U0	4196.3	4198.7	4209.7	4224.6	4239.1	4256.1	4271.9	4289.6	4308.3	4328.3	4348.9
	H-H0	5840.2	5858.9	5944.1	6055.8	6173.4	6297.3	6428.1	6565.9	6711.5	6865.1	7027.4
	(S-S0)/R	3.5322	1.2233	-0.4146	-1.1440	-1.5866	-1.9121	-2.1740	-2.3959	-2.5906	-2.7652	-2.9257
1120.	U-U0	4302.9	4305.5	4316.4	4331.3	4346.7	4363.5	4380.7	4398.4	4417.5	4437.7	4459.6
	H-H0	5986.5	6005.6	6091.2	6205.6	6325.2	6451.1	6583.9	6724.0	6871.8	7027.8	7192.6
	(S-S0)/R	3.5809	1.2718	-0.3663	-1.0954	-1.5378	-1.8631	-2.1248	-2.3466	-2.5410	-2.7158	-2.8758
1140.	U-U0	4409.8	4412.4	4423.9	4438.9	4454.7	4471.4	4489.6	4507.5	4527.0	4547.7	4569.5
	H-H0	6133.3	6152.6	6240.6	6355.9	6477.3	6605.2	6741.1	6882.3	7032.6	7190.7	7358.6
	(S-S0)/R	3.6282	1.3193	-0.3183	-1.0474	-1.4897	-1.8149	-2.0764	-2.2986	-2.4927	-2.6665	-2.8266
1160.	U-U0	4517.5	4519.8	4531.6	4546.9	4563.1	4580.1	4598.1	4617.0	4637.8	4658.1	4680.3
	H-H0	6280.4	6300.1	6389.9	6506.5	6629.8	6759.7	6898.6	7041.6	7193.3	7354.9	7523.7
	(S-S0)/R	3.6752	1.3665	-0.2712	-1.0002	-1.4422	-1.7673	-2.0288	-2.2506	-2.4441	-2.6183	-2.7780
1180.	U-U0	4625.8	4627.6	4639.6	4655.3	4671.8	4689.2	4707.6	4726.9	4747.3	4768.9	4791.9
	H-H0	6427.6	6447.9	6538.7	6657.9	6782.7	6914.5	7053.5	7200.0	7354.5	7517.6	7689.7
	(S-S0)/R	3.7216	1.4127	-0.2247	-0.9535	-1.3954	-1.7203	-1.9813	-2.2027	-2.3966	-2.5708	-2.7302
1200.	U-U0	4733.2	4735.6	4748.1	4764.1	4781.9	4798.8	4817.5	4837.2	4858.6	4880.0	4903.2
	H-H0	6575.9	6596.1	6686.3	6808.9	6938.5	7069.8	7210.8	7358.4	7516.1	7683.5	7858.1
	(S-S0)/R	3.7673	1.4585	-0.1786	-0.9075	-1.3492	-1.6740	-1.9356	-2.1561	-2.3498	-2.5238	-2.6830
1220.	U-U0	4841.8	4844.5	4857.0	4873.3	4890.5	4908.7	4927.6	4947.9	4969.1	4991.5	5015.2
	H-H0	6724.2	6744.7	6838.3	6960.7	7089.4	7225.4	7368.4	7519.1	7678.1	7845.8	8022.7
	(S-S0)/R	3.8125	1.5037	-0.1335	-0.8625	-1.3037	-1.4283	-1.8891	-2.1100	-2.3036	-2.4774	-2.6364
1240.	U-U0	4950.7	4953.5	4966.3	4982.8	5000.5	5019.0	5038.5	5059.8	5080.6	5103.5	5127.6
	H-H0	6872.9	6893.6	6988.7	7112.8	7243.6	7381.3	7526.4	7679.2	7840.6	8010.4	8189.7
	(S-S0)/R	3.8571	1.5483	-0.0888	-0.8177	-1.2586	-1.5831	-1.8438	-2.0645	-2.2579	-2.4316	-2.5904
1260.	U-U0	5059.1	5062.3	5076.0	5093.0	5110.9	5129.7	5149.6	5170.5	5192.6	5215.8	5240.3
	H-H0	7022.1	7043.2	7139.5	7265.5	7396.1	7537.7	7684.7	7839.7	8003.6	8175.3	8357.0
	(S-S0)/R	3.9011	1.5924	-0.0448	-0.7728	-1.2142	-1.5385	-1.7991	-2.0194	-2.2129	-2.3863	-2.5449
1280.	U-U0	5168.9	5172.0	5186.1	5203.4	5221.7	5240.9	5261.3	5282.4	5304.8	5328.5	5353.5
	H-H0	7171.6	7194.1	7290.7	7418.4	7552.9	7694.4	7843.5	8000.5	8166.0	8340.6	8524.7
	(S-S0)/R	3.9447	1.6360	-0.0010	-0.7291	-1.1703	-1.4945	-1.7549	-1.9753	-2.1683	-2.3418	-2.5001
1300.	U-U0	5280.1	5283.1	5296.6	5314.3	5332.8	5352.4	5373.0	5394.7	5417.6	5441.7	5467.1
	H-H0	7321.6	7343.5	7442.3	7571.8	7708.1	7851.5	8002.6	8161.7	8329.4	8506.2	8692.7
	(S-S0)/R	3.9877	1.6790	0.0422	-0.6858	-1.1269	-1.4509	-1.7112	-1.9314	-2.1243	-2.2975	-2.4567
1320.	U-U0	5390.7	5393.8	5407.5	5425.9	5444.6	5464.4	5486.5	5507.4	5530.7	5555.2	5581.1
	H-H0	7472.0	7494.4	7594.3	7725.6	7863.7	8009.0	8162.1	8323.3	8493.1	8672.2	8861.6
	(S-S0)/R	4.0302	1.7215	0.0848	-0.6431	-1.0840	-1.4079	-1.6686	-1.8881	-2.0809	-2.2538	-2.4119
1340.	U-U0	5501.6	5504.9	5518.9	5537.2	5556.9	5576.7	5598.1	5620.6	5644.7	5669.2	5695.5
	H-H0	7622.8	7645.1	7746.8	7879.8	8019.7	8166.9	8321.9	8485.2	8657.7	8838.5	9029.7
	(S-S0)/R	4.0722	1.7636	0.1270	-0.6008	-1.0416	-1.3654	-1.6254	-1.8453	-2.0378	-2.2107	-2.3686
1360.	U-U0	5613.3	5616.4	5630.6	5649.3	5668.9	5689.5	5711.2	5734.1	5758.2	5783.6	5810.3
	H-H0	7774.2	7796.6	7899.6	8034.4	8176.1	8325.2	8482.2	8647.5	8821.7	9005.2	9198.7
	(S-S0)/R	4.1138	1.8052	0.1686	-0.5598	-0.9997	-1.3233	-1.5832	-1.8038	-1.9954	-2.1681	-2.3258
1380.	U-U0	5725.1	5728.3	5742.8	5761.6	5781.7	5802.7	5824.8	5848.0	5872.5	5898.3	5925.5
	H-H0	7925.6	7948.5	8052.9	8189.1	8332.0	8483.9	8642.9	8810.2	8986.5	9172.2	9368.0
	(S-S0)/R	4.1549	1.8463	0.2099	-0.5177	-0.9582	-1.2817	-1.5414	-1.7631	-1.9534	-2.1259	-2.2839
1400.	U-U0	5837.4	5840.7	5855.4	5874.7	5895.6	5916.3	5938.8	5962.4	5987.3	6013.5	6041.2
	H-H0	8077.7	8100.4	8206.6	8344.6	8490.1	8643.0	8803.9	8973.3	9151.7	9339.6	9537.7
	(S-S0)/R	4.1956	1.8870	0.2506	-0.4768	-0.9172	-1.2406	-1.5001	-1.7197	-1.9118	-2.0842	-2.2416
1420.	U-U0	5950.2	5953.4	5968.4	5988.3	6008.7	6030.3	6053.2	6077.2	6102.5	6129.1	6157.2
	H-H0	8230.1	8253.6	8360.7	8500.6	8647.7	8803.5	8965.3	9136.7	9317.2	9507.4	9707.4
	(S-S0)/R	4.2358	1.9273	0.2908	-0.4363	-0.8766	-1.1999	-1.4595	-1.6787	-1.8707	-2.0429	-2.2002
1440.	U-U0	6063.3	6066.6	6081.9	6101.8	6122.8	6144.6	6168.2	6192.6	6218.5	6245.1	6273.6
	H-H0	8383.0	8406.8	8515.2	8656.6	8805.7	8962.3	9127.1	9300.5	9483.	9675.5	9878.2
	(S-S0)/R	4.2757	1.9671	0.3308	-0.3962	-0.8364	-1.1596	-1.4189	-1.6381	-1.8306	-2.0029	-2.1592
1460.	U-U0	6176.8	6180.2	6195.7	6216.0	6237.3	6259.6	6283.2	6308.0	6334.0	[illegible]	6392.5
	H-H0	8536.3	8560.4	8670.1	8813.4	8964.1	9122.4	9289.3	9464.7	9649.4	[illegible]	10049
	(S-S0)/R	4.3151	2.0066	0.3705	-0.3566	-0.7967	-1.1197	-1.3789	-1.5980	-1.7907	-1.9628	[illegible]
1480.	U-U0	6290.8	6294.3	6310.8	6330.6	6352.2	6374.9	6399.8	6424.0	6450.4	[illegible]	[illegible]
	H-H0	8690.1	8714.6	8825.4	8970.5	9123.0	9283.2	9451.9	9630.3	9816.1	[illegible]	[illegible]
	(S-S0)/R	4.3541	2.0456	0.4096	-0.3174	-0.7573	-1.0802	-1.3393	-1.5583	[illegible]	[illegible]	[illegible]
1500.	U-U0	6405.2	6408.7	6424.7	6445.9	6467.5	6490.6	6514.8	6540.4	6567.2	6595.7	6625.3
	H-H0	8844.2	8868.9	8981.1	9127.0	9282.1	9444.1	9614.7	9796.3	9983.1	[illegible]	[illegible]
	(S-S0)/R	4.3928	2.0843	0.4483	-0.2785	-0.7184	-1.0411	-1.3001	-1.5196	[illegible]	[illegible]	[illegible]
1520.	U-U0	6520.6	[illegible]	6539.8	6561.0	6583.2	[illegible]	6631.3	6657.2	6684.6	[illegible]	6743.4
	H-H0	8998.7	9023.7	9137.3	9285.7	9441.7	9605.7	9778.2	9959.6	10151	[illegible]	[illegible]
	(S-S0)/R	4.4310	2.1226	0.4867	-0.2400	-0.6798	-1.0024	-1.2613	-1.4800	-1.6733	[illegible]	[illegible]

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREES K)		DENSITY(AMAGAT)										
		500.	550.	600.	650.	700.	750.	800.	850.	900.	950.	1000.
1020.	U-U0	3932.1	3953.5	3975.8	3999.6	4024.8	4051.5	4079.9	4109.8	4141.9	4175.4	4212.0
	H-H0	6530.7	6701.0	6881.4	7072.3	7274.7	7488.2	7716.0	7958.1	8214.8	8487.4	8777.3
	(S-S0)/R	-3.2830	-3.4237	-3.5572	-3.6848	-3.8079	-3.9279	-4.0429	-4.1562	-4.2675	[illegible]	-4.4852
1040.	U-U0	4041.3	4063.2	4085.1	4110.4	4136.3	4163.6	[illegible]	4223.9	4256.2	4290.9	4327.9
	H-H0	6697.4	6870.6	7053.8	7247.8	7453.3	7671.2	[illegible]	8147.5	8407.4	8684.5	8978.5
	(S-S0)/R	-3.2298	-3.3701	-3.5033	-3.6308	-3.7534	-3.8722	-3.9878	-4.1008	-4.2116	[illegible]	-4.4280
1060.	U-U0	4150.8	4173.1	4196.7	4221.6	4246.1	4276.1	4305.8	4337.3	[illegible]	[illegible]	4444.0
	H-H0	6864.3	7040.2	7226.3	7423.4	7632.1	7853.5	8087.0	8336.7	8600.4	[illegible]	9179.8
	(S-S0)/R	-3.1771	-3.3173	-3.4503	-3.5775	-3.6998	-3.8183	-3.9336	-4.0462	-4.1567	[illegible]	-4.3729
1080.	U-U0	4260.7	4283.5	4307.6	4333.1	4360.2	4388.8	4419.2	4451.6	4485.6	[illegible]	4560.5
	H-H0	7031.5	7210.2	7399.1	7599.2	7811.0	8035.5	8273.5	8526.0	8794.5	9078.6	9381.0
	(S-S0)/R	-3.1254	-3.2653	-3.3981	-3.5250	-3.6471	-3.7653	-3.8802	-3.9925	-4.1026	-4.2110	-4.3181
1100.	U-U0	4371.0	4394.5	4418.9	4445.0	4472.6	4501.9	4532.9	4565.9	4600.4	[illegible]	4677.5
	H-H0	7199.8	7380.3	7572.2	7775.2	7990.2	8217.0	8459.4	8715.4	8987.1	[illegible]	9582.2
	(S-S0)/R	-3.0745	-3.2142	-3.3467	-3.4733	-3.5951	-3.7130	-3.8277	-3.9396	-4.0494	[illegible]	-4.2641
1120.	U-U0	4481.5	4505.6	4530.6	4557.2	4585.5	4615.4	4647.0	4680.6	4715.5	4754.1	4794.4
	H-H0	7366.7	7550.6	7742.4	7951.4	8169.5	8400.5	8642.2	8904.0	9180.4	9477.8	9783.4
	(S-S0)/R	-3.0243	-3.1638	-3.2961	-3.4224	-3.5440	-3.6616	-3.7759	-3.8876	-3.9970	-4.1047	-4.2110
1140.	U-U0	4592.5	4616.6	4642.6	4669.8	4698.6	4729.1	4761.5	4795.8	4832.1	4870.0	4911.8
	H-H0	7534.7	7721.6	7918.9	8127.5	8349.0	8583.2	8831.4	9094.6	9373.7	9670.0	9988.7
	(S-S0)/R	-2.9740	-3.1141	-3.2462	-3.3723	-3.4936	-3.6109	-3.7249	-3.8363	-3.9454	-4.0520	-4.1587
1160.	U-U0	4703.8	4728.7	4754.9	4782.7	4812.1	4843.3	4876.3	4911.2	4948.3	4987.7	5029.5
	H-H0	7703.0	7892.4	8092.7	8304.5	8528.8	8766.2	9017.7	9284.4	9567.2	9867.3	10188.
	(S-S0)/R	-2.9261	-3.0652	-3.1970	-3.3228	-3.4439	-3.5609	-3.6747	-3.7857	-3.8946	-4.0010	-4.1072
1180.	U-U0	4815.5	4840.9	4867.7	4896.0	4926.0	4957.8	4991.4	5027.1	5064.9	5105.3	5147.6
	H-H0	7871.5	8063.6	8266.7	8481.4	8708.7	8949.3	9204.2	9474.3	9760.7	10065.	10387.
	(S-S0)/R	-2.8781	-3.0169	-3.1484	-3.2741	-3.3949	-3.5116	-3.6251	-3.7359	-3.8444	-3.9511	-4.0564
1200.	U-U0	4927.6	4953.5	4980.8	5009.7	5040.3	5072.6	5106.9	5143.2	5181.8	5222.6	5266.0
	H-H0	8040.4	8235.1	8441.0	8658.6	8888.9	9132.6	9390.8	9664.4	9954.4	10262.	10589.
	(S-S0)/R	-2.8307	-2.9693	-3.1006	-3.2260	-3.3465	-3.4630	-3.5763	-3.6867	-3.7950	-3.9014	-4.0063
1220.	U-U0	5040.1	5066.5	5094.3	5123.8	5154.9	5187.9	5222.8	5259.8	5299.0	5340.6	5384.7
	H-H0	8209.8	8406.9	8615.5	8836.0	9069.3	9316.2	9577.6	9854.6	10148.	10460.	10790.
	(S-S0)/R	-2.7839	-2.9223	-3.0534	-3.1785	-3.2988	-3.4151	-3.5280	-3.6383	-3.7462	-3.8523	-3.9569
1240.	U-U0	5153.0	5179.8	5208.1	5238.2	5269.9	5303.5	5339.1	5376.7	5416.6	5458.9	5503.8
	H-H0	8379.1	8578.0	8790.3	9013.7	9250.0	9500.0	9764.7	10045.	10342.	10657.	10992.
	(S-S0)/R	-2.7377	-2.8758	-3.0066	-3.1317	-3.2518	-3.3678	-3.4805	-3.5904	-3.6981	-3.8049	-3.9081
1260.	U-U0	5266.3	5293.4	5322.5	5353.0	5385.3	5419.5	5455.7	5494.0	5534.6	5577.6	5623.3
	H-H0	8548.9	8751.4	8965.5	9191.7	9430.9	9684.0	9951.9	10236.	10536.	10855.	11195.
	(S-S0)/R	-2.6920	-2.8300	-2.9607	-3.0854	-3.2055	-3.3211	-3.4335	-3.5432	-3.6505	-3.7560	-3.8600
1280.	U-U0	5379.9	5407.8	5437.2	5468.2	5501.1	5535.9	5572.7	5611.6	5652.9	5696.7	5743.1
	H-H0	8719.0	8924.1	9140.9	9369.8	9612.1	9868.2	10139.	10426.	10731.	11055.	11395.
	(S-S0)/R	-2.6470	-2.7848	-2.9153	-3.0398	-3.1594	-3.2749	-3.3871	-3.4965	-3.6036	-3.7088	-3.8129
1300.	U-U0	5494.0	5522.3	5552.2	5583.8	5617.3	5652.6	5690.1	5729.7	5771.6	5816.1	5863.5
	H-H0	8889.4	9097.2	9316.6	9548.6	9793.5	10053.	10327.	10617.	10925.	11251.	11597.
	(S-S0)/R	-2.6025	-2.7401	-2.8704	-2.9947	-3.1140	-3.2294	-3.3413	-3.4505	-3.5573	-3.6622	-3.7650
1320.	U-U0	5608.4	5637.3	5667.7	5699.8	5733.8	5769.8	5807.8	5848.1	5890.7	5935.9	5983.8
	H-H0	9060.2	9270.5	9492.6	9727.2	9975.2	10237.	10515.	10809.	11120.	11450.	11799.
	(S-S0)/R	-2.5585	-2.6958	-2.8260	-2.9501	-3.0692	-3.1843	-3.2961	-3.4050	-3.5115	-3.6162	-3.7193
1340.	U-U0	5723.3	5752.6	5783.4	5816.2	5850.9	5887.3	5926.0	5966.9	6010.2	6056.1	6104.8
	H-H0	9231.3	9444.2	9668.9	9906.3	10157.	10422.	10703.	11000.	11315.	11648.	12001.
	(S-S0)/R	-2.5150	-2.6522	-2.7823	-2.9060	-3.0250	-3.1398	-3.2513	-3.3600	-3.4663	-3.5707	-3.6735
1360.	U-U0	5838.6	5868.4	5899.8	5933.0	5968.1	6005.2	6044.5	6086.0	6130.0	6176.6	6226.0
	H-H0	9402.8	9618.1	9845.5	10088.	10339.	10606.	10891.	11192.	11510.	11847.	12204.
	(S-S0)/R	-2.4720	-2.6091	-2.7388	-2.8625	-2.9812	-3.0959	-3.2073	-3.3156	-3.4216	-3.5258	-3.6285
1380.	U-U0	5954.2	5984.5	6016.5	6050.2	6085.9	6123.6	6163.4	6205.6	6250.3	6297.6	6347.7
	H-H0	9574.5	9792.6	10022.	10265.	10522.	10793.	11080.	11384.	11705.	12045.	12406.
	(S-S0)/R	-2.4295	-2.5664	-2.6959	-2.8194	-2.9380	-3.0524	-3.1634	-3.2716	-3.3775	-3.4813	-3.5835
1400.	U-U0	6070.3	6101.1	6133.5	6167.8	6204.0	[illegible]	6282.7	6325.5	6370.9	6418.8	6469.7
	H-H0	9746.6	9967.0	10200.	10445.	10715.	[illegible]	11269.	11576.	11900.	12244.	12609.
	(S-S0)/R	-2.3875	-2.5242	-2.6535	-2.7768	-2.8952	[illegible]	-3.1202	-3.2282	-3.3338	-3.4374	-3.5394
1420.	U-U0	6186.8	6218.0	6251.0	6285.8	6322.5	6361.4	6402.4	6445.9	6491.8	6540.7	6592.1
	H-H0	9919.1	10142.	10377.	10625.	10888.	11165.	11458.	11768.	12096.	12444.	12812.
	(S-S0)/R	-2.3459	-2.4824	-2.6116	-2.7347	-2.8529	-2.9669	-3.0775	-3.1852	-3.2906	-3.3940	-3.4957
1440.	U-U0	6303.1	6335.4	6368.8	6404.2	6441.4	6480.9	6522.5	6566.6	6613.2	6662.6	6714.8
	H-H0	10092.	10317.	10555.	10806.	11071.	11351.	11647.	11961.	12292.	12641.	13015.
	(S-S0)/R	-2.3047	-2.4411	-2.5701	-2.6930	-2.8110	-2.9248	-3.0352	-3.1427	-3.2479	-3.3510	-3.4525
1460.	U-U0	6421.0	6453.2	6487.1	6522.9	6560.8	6600.7	6643.0	6687.7	6734.9	[illegible]	6838.3
	H-H0	10265.	10493.	10733.	10987.	11255.	11538.	11837.	12153.	12488.	12842.	13218.
	(S-S0)/R	-2.2640	-2.4002	-2.5290	-2.6518	-2.7696	-2.8832	-2.9934	-3.1007	-3.2055	-3.3085	-3.4097
1480.	U-U0	6538.7	6571.3	6605.8	6642.1	6680.5	6721.0	6763.6	6809.1	6857.1	6907.8	6961.5
	H-H0	10438.	10669.	10912.	11168.	11439.	11725.	12027.	12346.	12684.	13042.	13421.
	(S-S0)/R	-2.2237	-2.3598	-2.4884	-2.6110	-2.7286	-2.8420	-2.9520	-3.0591	-3.1638	-3.2664	-3.3675
1500.	U-U0	6656.4	6689.9	6724.8	6761.7	6800.6	6841.7	6885.1	6931.0	6979.5	7030.9	7085.4
	H-H0	10612.	10845.	11090.	11350.	11623.	11912.	12217.	12540.	12881.	13242.	13624.
	(S-S0)/R	-2.1838	-2.3197	-2.4482	-2.5706	-2.6880	-2.8012	-2.9110	-3.0179	-3.1224	-3.2248	-3.3256
1520	U-U0	6775.2	6808.6	6844.2	6881.6	6921.1	6963.1	7006.7	7053.2	7102.4	7154.5	7209.6
	H-H0	10786.	11022.	11270.	11531.	11807.	12099.	12407.	12733.	13078.	13442.	13828.
	(S-S0)/R	-2.1443	-2.2800	-2.4084	-2.5306	-2.6478	-2.7609	-2.8705	-2.9772	-3.0814	-3.1836	-3.2846

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT) 1050.	1100.	1150.	1200.	1250.	1300.	1350.	1400.	1450.	1500.	1550.
1020.	U-U0	4250.4	4291.3	4334.9	4381.3	4430.9	4483.8	4540.3	4600.0	4665.9	4734.9	4809.2
	H-H0	9085.7	9414.0	9763.0	10137.	10535.	10960.	11413.	11899.	12416.	12975.	13571.
	(S-S0)/R	-4.5925	-4.6990	-4.8051	-4.9110	-5.0169	-5.1229	-5.2294	-5.3364	-5.4441	-5.5527	-5.6624
1040.	U-U0	4367.1	4409.6	4453.5	4501.0	4551.7	4605.8	4663.5	4725.3	4791.3	4862.1	4937.0
	H-H0	9291.4	9624.4	9979.1	10357.	10760.	11191.	11651.	12142.	12668.	13232.	13835.
	(S-S0)/R	-4.5396	-4.6415	-4.7471	-4.8529	-4.9578	-5.0633	-5.1692	-5.2756	-5.3826	-5.4905	-5.5994
1060.	U-U0	4483.2	4528.9	4572.5	4621.0	4672.7	4727.9	4786.9	4848.9	4913.3	4989.5	5066.0
	H-H0	9498.8	9834.4	10194.	10577.	10986.	11422.	11888.	12385.	12918.	13488.	14097.
	(S-S0)/R	-4.4783	-4.5849	-4.6901	-4.7949	-4.8998	-5.0047	-5.1106	-5.2158	-5.3222	-5.4295	-5.5376
1080.	U-U0	4601.5	4649.2	4691.7	4741.2	4794.0	4850.3	4910.5	4974.8	5043.5	5117.1	5195.9
	H-H0	9702.6	10045.	10408.	10797.	11211.	11653.	12124.	12628.	13167.	13743.	14381.
	(S-S0)/R	-4.4241	-4.5293	-4.6340	-4.7384	-4.8427	-4.9472	-5.0529	-5.1573	-5.2629	-5.3694	-5.4769
1100.	U-U0	4719.2	4763.7	4811.1	4861.7	4915.5	4973.0	5034.3	5099.8	5169.0	5244.8	5325.1
	H-H0	9908.1	10255.	10624.	11017.	11436.	11883.	12360.	12870.	13415.	13998.	14623.
	(S-S0)/R	-4.3667	-4.4745	-4.5788	-4.6827	-4.7866	-4.8905	-4.9947	-5.0993	-5.2045	-5.3104	-5.4172
1120.	U-U0	4837.1	4882.5	4930.9	4982.4	5037.3	5095.9	5158.4	5225.1	5296.7	5372.8	5454.5
	H-H0	10114.	10465.	10838.	11237.	11661.	12113.	12596.	13112.	13663.	14253.	14884.
	(S-S0)/R	-4.3162	-4.4206	-4.5245	-4.6288	-4.7313	-4.8348	-4.9384	-5.0429	-5.1471	-5.2524	-5.3585
1140.	U-U0	4955.3	5001.7	5051.0	5103.5	5159.4	5219.1	5282.7	5350.7	5423.3	5501.0	5584.1
	H-H0	10319.	10675.	11053.	11456.	11885.	12343.	12831.	13353.	13910.	14506.	15144.
	(S-S0)/R	-4.2636	-4.3676	-4.4710	-4.5743	-4.6769	-4.7799	-4.8830	-4.9866	-5.0906	-5.1953	-5.3008
1160.	U-U0	5073.9	5121.1	5171.3	5224.8	5281.8	5342.5	5407.3	5476.4	5550.3	5629.3	5713.9
	H-H0	10525.	10885.	11268.	11675.	12110.	12573.	13066.	13594.	14157.	14760.	15404.
	(S-S0)/R	-4.2117	-4.3153	-4.4183	-4.5209	-4.6234	-4.7258	-4.8285	-4.9315	-5.0350	-5.1391	-5.2440
1180.	U-U0	5192.8	5240.9	5292.0	5346.5	5404.4	5466.2	5532.1	5602.5	5677.6	5759.0	5845.9
	H-H0	10730.	11094.	11482.	11894.	12334.	12802.	13301.	13834.	14404.	15012.	15663.
	(S-S0)/R	-4.1605	-4.2637	-4.3664	-4.4686	-4.5706	-4.6726	-4.7748	-4.8773	-4.9802	-5.0836	-5.1880
1200	U-U0	5312.0	5361.0	5413.0	5468.4	5527.4	5590.2	5657.3	5728.8	5805.7	5886.8	5974.1
	H-H0	10936.	11304.	11696.	12114.	12558.	13031.	13536.	14075.	14650.	15265.	15922.
	(S-S0)/R	-4.1101	-4.2129	-4.3152	-4.4170	-4.5186	-4.6201	-4.7218	-4.8238	-4.9263	-5.0292	-5.1329
1220.	U-U0	5431.6	5481.6	5534.4	5590.7	5650.7	5714.6	5782.7	5855.4	5933.0	6015.9	6104.5
	H-H0	11141.	11514.	11911.	12333.	12782.	13260.	13770.	14315.	14896.	15517.	16181.
	(S-S0)/R	-4.0603	-4.1620	-4.2647	-4.3661	-4.4673	-4.5684	-4.6697	-4.7712	-4.8731	-4.9755	-5.0787
1240.	U-U0	5551.5	5602.2	5656.0	5713.3	5774.2	5839.2	5908.4	5982.2	6061.0	6145.2	6235.2
	H-H0	11347.	11724.	12125.	12551.	13009.	13489.	14004.	14554.	15141.	15768.	16438.
	(S-S0)/R	-4.0112	-4.1134	-4.2149	-4.3159	-4.4167	-4.5174	-4.6182	-4.7192	-4.8207	-4.9226	-5.0252
1260.	U-U0	5671.8	5723.3	5778.0	5836.2	5898.1	5964.1	6034.4	6109.4	6189.4	6274.8	6366.2
	H-H0	11553.	11934.	12339.	12770.	13229.	13718.	14238.	14794.	15386.	16019.	16696.
	(S-S0)/R	-3.9628	-4.0646	-4.1658	-4.2664	-4.3668	-4.4671	-4.5675	-4.6680	-4.7690	-4.8704	-4.9725
1280.	U-U0	5792.4	5844.7	5900.3	5959.4	6022.4	6089.3	6160.7	6236.8	6318.0	6404.7	6497.3
	H-H0	11758.	12144.	12554.	12989.	13453.	13946.	14472.	15033.	15631.	16270.	16953.
	(S-S0)/R	-3.9150	-4.0165	-4.1173	-4.2176	-4.3176	-4.4175	-4.5174	-4.6175	-4.7180	-4.8189	-4.9205
1300.	U-U0	5913.4	5966.5	6023.0	6083.0	6146.9	6214.9	6287.3	6364.5	6446.8	6534.8	6628.8
	H-H0	11964.	12354.	12768.	13208.	13676.	14175.	14706.	15272.	15874.	16520.	17208.
	(S-S0)/R	-3.8678	-3.9690	-4.0694	-4.1694	-4.2690	-4.3685	-4.4680	-4.5677	-4.6677	-4.7681	-4.8692
1320.	U-U0	6034.7	6088.7	6146.0	6206.9	6271.8	6340.8	6414.2	6492.5	6576.1	6665.2	6760.4
	H-H0	12170.	12564.	12982.	13427.	13900.	14403.	14939.	15511.	16120.	16771.	17465.
	(S-S0)/R	-3.8212	-3.9220	-4.0221	-4.1217	-4.2210	-4.3201	-4.4192	-4.5185	-4.6180	-4.7180	-4.8186
1340.	U-U0	6156.4	6211.2	6269.4	6331.2	6397.0	6466.9	6541.5	6620.9	6705.5	6795.9	6892.4
	H-H0	12376.	12774.	13197.	13646.	14123.	14632.	15173.	15749.	16364.	17020.	17721.
	(S-S0)/R	-3.7751	-3.8756	-3.9754	-4.0747	-4.1736	-4.2723	-4.3710	-4.4699	-4.5690	-4.6686	-4.7686
1360.	U-U0	6278.4	6334.0	6393.1	6455.8	6522.5	6593.5	6669.0	6749.5	6835.3	6926.9	7024.6
	H-H0	12582.	12984.	13411.	13865.	14347.	14860.	15406.	15988.	16608.	17270.	17977.
	(S-S0)/R	-3.7296	-3.8298	-3.9293	-4.0282	-4.1268	-4.2251	-4.3235	-4.4219	-4.5206	-4.6197	-4.7193
1380.	U-U0	6400.8	6457.2	6517.1	6580.7	6648.4	6720.3	6796.9	6878.4	6965.6	7058.1	7157.1
	H-H0	12788.	13195.	13626.	14084.	14570.	15088.	15639.	16226.	16852.	17519.	18232.
	(S-S0)/R	-3.6846	-3.7845	-3.8837	-3.9823	-4.0805	-4.1785	-4.2765	-4.3746	-4.4728	-4.5715	-4.6706
1400.	U-U0	6523.6	6580.8	6641.5	6706.0	6774.6	6847.5	6925.1	7007.7	7095.8	7189.7	7289.9
	H-H0	12995.	13405.	13840.	14303.	14794.	15316.	15872.	16464.	17096.	17769.	18487.
	(S-S0)/R	-3.6401	-3.7398	-3.8387	-3.9369	-4.0348	-4.1325	-4.2301	-4.3277	-4.4256	-4.5238	-4.6225
1420.	U-U0	6646.8	6704.0	6766.3	6831.7	6901.1	6975.0	7053.6	7137.3	7226.4	7321.5	7423.0
	H-H0	13202.	13616.	14055.	14522.	15017.	15544.	16105.	16703.	17339.	18017.	18742.
	(S-S0)/R	-3.5962	-3.6955	-3.7941	-3.8921	-3.9896	-4.0869	-4.1842	-4.2815	-4.3790	-4.4768	-4.5750
1440.	U-U0	6770.3	6829.1	6891.4	6957.8	7028.0	7102.8	7182.4	7267.2	7357.4	7453.6	7556.5
	H-H0	13409.	13826.	14270.	14741.	15241.	15773.	16338.	16941.	17582.	18266.	18996.
	(S-S0)/R	-3.5527	-3.6518	-3.7501	-3.8477	-3.9450	-4.0419	-4.1388	-4.2358	-4.3329	-4.4303	-4.5281
1460.	U-U0	6894.1	6953.7	7016.9	7084.0	7155.3	7231.0	7311.6	7397.4	7488.7	7586.1	7689.9
	H-H0	13615.	14037.	14485.	14960.	15464.	16001.	16571.	17178.	17825.	18515.	19250.
	(S-S0)/R	-3.5097	-3.6085	-3.7065	-3.8039	-3.9008	-3.9974	-4.0940	-4.1905	-4.2873	-4.3843	-4.4817
1480.	U-U0	7018.4	7078.7	7142.7	7210.7	7282.8	7358.5	7441.1	7527.9	7620.3	7718.8	7823.8
	H-H0	13822.	14248.	14700.	15179.	15688.	16229.	16804.	17416.	18068.	18763.	19504.
	(S-S0)/R	-3.4671	-3.5657	-3.6634	-3.7605	-3.8571	-3.9534	-4.0496	-4.1458	-4.2422	-4.3388	-4.4358
1500.	U-U0	7143.8	7204.1	7268.9	7337.7	7410.8	7488.4	7570.9	7658.7	7752.2	7851.8	[illegible]
	H-H0	14030.	14459.	14919.	15398.	15911.	16457.	17037.	17654.	18311.	[illegible]	19758
	(S-S0)/R	-3.4250	-3.5233	-3.6208	-3.7176	-3.8139	-3.9099	-4.0059	-4.1016	-4.1976	-4.2939	-4.3905
1520.	U-U0	7268.0	7329.8	7395.5	7465.1	7539.0	7617.5	7701.0	7789.9	7884.4	7985.1	8097.5
	H-H0	14237.	14670.	15130.	15617.	16135.	16685.	17270.	17892.	18554.	19259.	20011.
	(S-S0)/R	-3.3833	-3.4814	-3.5786	-3.6751	-3.7711	-3.8668	-3.9624	-4.0579	-4.1536	-4.2494	-4.3456

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT)								
		1600.	1650.	1700.	1750.	1800.	1850.	1900.	1950.	2000.
1020.	U-U0	4888.4	4974.5	5060.6	5165.7	5272.4	5387.4	5511.6	5645.8	5791.1
	H-H0	14212.	14899.	15638.	16433.	17290	18213	19211.	20288.	21454.
	(S-S0)/R	-5.7731	-5.8852	-5.9962	-6.1137	-6.2304	-6.3488	-6.4691	-6.5914	-6.7157
1040.	U-U0	5019.3	5106.1	5197.5	5301.5	5410.2	5527.4	5653.9	5790.5	5938.3
	H-H0	14483.	15178.	15926.	16729.	17599.	18527.	19535.	20623.	21799.
	(S-S0)/R	-5.7094	-5.8206	-5.9332	-6.0473	-6.1630	-6.2804	-6.3990	-6.5287	-6.6438
1060.	U-U0	5149.8	5238.8	5334.4	5437.3	5548.9	5667.3	5796.1	5935.1	6085.4
	H-H0	14754.	15457.	16212.	17026.	17899.	18841.	19858.	20958.	22143.
	(S-S0)/R	-5.6460	-5.7573	-5.8690	-5.9822	-6.0989	-6.2133	-6.3314	-6.4514	-6.5732
1080.	U-U0	5280.4	5371.1	5468.5	5573.2	5685.9	5807.3	5938.7	6079.5	6232.3
	H-H0	15023.	15734.	16497.	17318.	18201.	19153.	20179.	21286.	22484.
	(S-S0)/R	-5.5854	-5.6950	-5.8059	-5.9182	-6.0326	-6.1474	-6.2645	-6.3834	-6.5041
1100.	U-U0	5411.2	5503.5	5602.6	5709.1	5823.8	5947.2	6080.3	6223.8	6379.1
	H-H0	15292.	16010.	16782.	17611.	18502.	19463.	20498.	21616.	22823.
	(S-S0)/R	-5.5258	-5.6339	-5.7440	-5.8554	-5.9684	-6.0828	-6.1989	-6.3167	-6.4363
1120.	U-U0	5542.1	5636.0	5736.8	5845.2	5961.7	6087.1	6222.3	6368.2	6525.8
	H-H0	15560.	16286.	17065.	17902.	18802.	19771.	20816.	21943.	23160.
	(S-S0)/R	-5.4656	-5.5738	-5.6831	-5.7937	-5.9058	-6.0193	-6.1345	-6.2513	-6.3698
1140.	U-U0	5673.2	5768.7	5871.2	5981.3	6099.7	6227.1	6364.4	6512.5	6672.4
	H-H0	15828.	16561.	17347.	18192.	19101.	20079.	21132.	22269.	23496.
	(S-S0)/R	-5.4072	-5.5146	-5.6232	-5.7331	-5.8443	-5.9570	-6.0712	-6.1870	-6.3049
1160.	U-U0	5804.5	5901.5	6005.7	6117.5	6237.8	6367.3	6506.5	6656.8	6819.0
	H-H0	16095.	16835.	17629.	18482.	19398.	20385.	21447.	22593.	23830.
	(S-S0)/R	-5.3497	-5.4565	-5.5644	-5.6735	-5.7839	-5.8957	-6.0090	-6.1238	-6.2403
1180.	U-U0	5935.9	6034.5	6140.3	6253.9	6375.9	6507.2	6648.6	6801.0	6965.5
	H-H0	16361.	17108.	17910.	18770.	19695.	20690.	21761.	22916.	24162.
	(S-S0)/R	-5.2932	-5.3993	-5.5064	-5.6148	-5.7244	-5.8354	-5.9478	-6.0617	-6.1773
1200.	U-U0	6067.6	6167.7	6275.1	6390.4	6514.2	6647.6	6790.8	6945.3	7112.5
	H-H0	16626.	17381.	18189.	19058.	19990.	20993.	22073.	23237.	24492.
	(S-S0)/R	-5.2375	-5.3429	-5.4494	-5.5570	-5.6659	-5.7761	-5.8877	-6.0007	-6.1153
1220.	U-U0	6199.4	6301.1	6410.1	6527.0	6652.	6787.7	6933.0	7089.6	7258.4
	H-H0	16891.	17652.	18468.	19344.	20285.	21296.	22384.	23557.	24821.
	(S-S0)/R	-5.1826	-5.2874	-5.3933	-5.5002	-5.6083	-5.7177	-5.8285	-5.9407	-6.0543
1240.	U-U0	6331.5	6434.7	6545.2	6663.8	6791.2	6928.1	7075.3	7233.9	7404.9
	H-H0	17156.	17924.	18747.	19630.	20578.	21598.	22694.	23876.	25149.
	(S-S0)/R	-5.1285	-5.2327	-5.3379	-5.4442	-5.5516	-5.6603	-5.7702	-5.8816	-5.9944
1260.	U-U0	6463.9	6568.5	6680.6	6800.8	6929.9	7068.6	7217.7	7378.4	7551.5
	H-H0	17419.	18194.	19025.	19915.	20871.	21898.	23003.	24193.	25475.
	(S-S0)/R	-5.0752	-5.1788	-5.2834	-5.3890	-5.4958	-5.6037	-5.7129	-5.8234	-5.9354
1280.	U-U0	6596.4	6702.5	6816.1	6937.9	7068.7	7209.2	7360.2	7522.8	7698.0
	H-H0	17683.	18464.	19302.	20199.	21163.	22198.	23311.	24509.	25800.
	(S-S0)/R	-5.0227	-5.1257	-5.2297	-5.3347	-5.4407	-5.5479	-5.6564	-5.7662	-5.8773
1300.	U-U0	6729.2	6836.7	6951.6	7075.3	7207.7	7349.9	7502.9	7667.4	7844.6
	H-H0	17946.	18734.	19578.	20483.	21454.	22497.	23618.	24824.	26124.
	(S-S0)/R	-4.9709	-5.0734	-5.1767	-5.2811	-5.3865	-5.4930	-5.6007	-5.7097	-5.8200
1320.	U-U0	6862.2	6971.2	7087.8	7212.8	7346.9	7490.9	7645.6	7812.1	7991.3
	H-H0	18208.	19003.	19854.	20766.	21744.	22795.	23924.	25138.	26446.
	(S-S0)/R	-4.9197	-5.0217	-5.1245	-5.2282	-5.3330	-5.4389	-5.5459	-5.6542	-5.7637
1340.	U-U0	6995.5	7105.9	7224.0	7350.5	7486.2	7631.9	7788.5	7956.8	8138.1
	H-H0	18470.	19271.	20129.	21048.	22034.	23092.	24228.	25451.	26767.
	(S-S0)/R	-4.8693	-4.9707	-5.0729	-5.1761	-5.2802	-5.3855	-5.4918	-5.5994	-5.7081
1360.	U-U0	7129.1	7240.8	7360.4	7488.4	7625.8	7773.1	7931.5	8101.7	8284.9
	H-H0	18732.	19539.	20404.	21330.	22322.	23388.	24532.	25763.	27087.
	(S-S0)/R	-4.8195	-4.9204	-5.0221	-5.1247	-5.2282	-5.3328	-5.4385	-5.5453	-5.6534
1380.	U-U0	7262.9	7376.0	7497.0	7626.6	7765.5	7914.5	8074.6	8246.7	8431.8
	H-H0	18993.	19807.	20678.	21611.	22611.	23683.	24835.	26074.	27406.
	(S-S0)/R	-4.7703	-4.8707	-4.9719	-5.0739	-5.1769	-5.2808	-5.3859	-5.4921	-5.5994
1400.	U-U0	7397.0	7511.4	7633.8	7764.9	7905.4	8056.1	8217.9	8391.8	8578.9
	H-H0	19254.	20074.	20952.	21891.	22898.	23978.	25138.	26384.	27724.
	(S-S0)/R	-4.7218	-4.8217	-4.9223	-5.0238	-5.1262	-5.2296	-5.3340	-5.4395	-5.5461
1420.	U-U0	7531.3	7647.1	7770.9	7903.5	8045.5	8197.9	8361.4	8537.1	8726.0
	H-H0	19515.	20341.	21225.	22171.	23185.	24272.	25439.	26693.	28041.
	(S-S0)/R	-4.6738	-4.7732	-4.8734	-4.9743	-5.0762	-5.1790	-5.2828	-5.3876	-5.4936
1440.	U-U0	7665.9	7783.0	7908.2	8042.3	8185.9	8339.8	8505.0	8682.5	8873.3
	H-H0	19775.	20607.	21498.	22451.	23471.	24565.	25740.	27001.	28357.
	(S-S0)/R	-4.6264	-4.7254	-4.8250	-4.9255	-5.0268	-5.1290	-5.2322	-5.3364	-5.4418
1460.	U-U0	7800.8	7919.2	8045.8	8181.3	8326.4	8481.9	8648.8	8828.0	9020.6
	H-H0	20035.	20874.	21770.	22729.	23757.	24858.	26040.	27309.	28672.
	(S-S0)/R	-4.5796	-4.6781	-4.7773	-4.8772	-4.9780	-5.0796	-5.1823	-5.2859	-5.3906
1480.	U-U0	7935.9	8055.7	8183.6	8320.6	8467.2	8624.3	8792.8	8973.7	9168.1
	H-H0	20295.	21139.	22042.	23008.	24042.	25150.	26339.	27615.	28987.
	(S-S0)/R	-4.5333	-4.6313	-4.7301	-4.8295	-4.9298	-5.0309	-5.1330	-5.2360	-5.3401
1500.	U-U0	8071.4	8192.4	8321.7	8460.1	8608.1	8766.8	8936.9	9119.6	9315.8
	H-H0	20554.	21405.	22314.	23286.	24327.	25442.	26637.	27921.	29300.
	(S-S0)/R	-4.4875	-4.5852	-4.6834	-4.7824	-4.8821	-4.9827	-5.0843	-5.1867	-5.2902
1520.	U-U0	8207.1	8329.4	8460.0	8599.8	8749.3	8909.5	9081.3	9265.6	9463.6
	H-H0	20813.	21670.	22585.	23563.	24611.	25733.	26935.	28226.	29612.
	(S-S0)/R	-4.4423	-4.5395	-4.6373	-4.7358	-4.8351	-4.9352	-5.0361	-5.1380	-5.2409

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREES K)		DENSITY (AMAGATS)										
		1.	10.	50.	100.	150.	200.	250.	300.	350.	400.	450.
1540.	U-U0	6635.7	6638.4	6655.2	6676.0	6699.4	6723.1	6748.1	6774.4	6802.1	6831.2	6861.0
	H-H0	9153.7	9178.9	9293.8	9444.0	9601.7	9767.5	9941.9	10125.	10318.	10523.	10739.
	(S-S0)/R	4.4689	2.1625	0.5247	-0.2019	-0.6416	-0.9641	-1.2228	-1.4414	-1.6326	-1.8040	-1.9604
1560.	U-U0	6750.0	6754.4	6771.1	6792.0	6815.9	6840.0	6865.9	6892.0	6920.1	6949.6	6980.7
	H-H0	9309.0	9336.0	9450.8	9602.6	9762.1	9928.7	10106.	10291.	10486.	10692.	10908.
	(S-S0)/R	4.5085	2.1989	0.5624	-0.1647	-0.6037	-0.9261	-1.1847	-1.4032	-1.5943	-1.7655	-1.9218
1580.	U-U0	6866.4	6870.4	6887.5	6909.6	6932.9	6957.5	6983.6	7010.0	7038.5	7068.4	7099.9
	H-H0	9464.8	9491.6	9608.1	9761.6	9922.9	10092.	10270.	10458.	10655.	10862.	11081.
	(S-S0)/R	4.5437	2.2352	0.5996	-0.1266	-0.5662	-0.8885	-1.1470	-1.3654	-1.5563	-1.7276	-1.8836
1600.	U-U0	6983.2	6987.0	7004.2	7026.6	7050.2	7075.0	7101.6	7128.4	7157.3	7187.6	7219.5
	H-H0	9621.0	9647.1	9765.8	9921.0	10084.	10255.	10435.	10625.	10824.	11031.	11254.
	(S-S0)/R	4.5805	2.2721	0.6360	-0.0897	-0.5291	-0.8513	-1.1096	-1.3279	-1.5187	-1.6897	-1.8457
1620.	U-U0	7100.0	7103.8	7121.3	7144.0	7168.0	7193.1	7219.5	7247.3	7276.5	7307.2	7339.5
	H-H0	9777.5	9803.9	9924.0	10081.	10246.	10419.	10601.	10792.	10993.	11205.	11427.
	(S-S0)/R	4.6175	2.3087	0.6732	-0.0530	-0.4922	-0.8143	-1.0726	-1.2908	-1.4815	-1.6523	-1.8082
1640.	U-U0	7217.2	7221.1	7238.9	7261.9	7286.1	7311.6	7338.3	7366.5	7396.0	7427.2	7459.9
	H-H0	9934.5	9961.2	10083.	10241.	10407.	10582.	10768.	10959.	11163.	11376.	11601.
	(S-S0)/R	4.6533	2.3449	0.7095	-0.0166	-0.4558	-0.7778	-1.0359	-1.2539	-1.4445	-1.6152	-1.7710
1660.	U-U0	7334.8	7338.8	7356.7	7380.1	7404.6	7430.4	7457.5	7486.0	7516.0	7547.5	7580.7
	H-H0	10092.	10119.	10241.	10402.	10570.	10746.	10932.	11127.	11332.	11548.	11778.
	(S-S0)/R	4.6891	2.3808	0.7455	0.0194	-0.4196	-0.7415	-0.9995	-1.2174	-1.4079	-1.5785	-1.7341
1680.	U-U0	7452.8	7456.9	7475.0	7498.7	7523.5	7549.7	7577.1	7606.0	7636.4	7668.3	7701.9
	H-H0	10250.	10277.	10401.	10563.	10732.	10911.	11098.	11296.	11503.	11721.	11950.
	(S-S0)/R	4.7247	2.4164	0.7811	0.0552	-0.3837	-0.7055	-0.9635	-1.1813	-1.3716	-1.5421	-1.6976
1700.	U-U0	7571.2	7575.2	7593.6	7617.6	7642.8	7669.3	7697.1	7726.4	7757.1	7789.6	7823.4
	H-H0	10408.	10435.	10560.	10724.	10896.	11076.	11265.	11464.	11673.	11891.	12125.
	(S-S0)/R	4.7600	2.4517	0.8165	0.0906	-0.3482	-0.6699	-0.9277	-1.1454	-1.3357	-1.5060	-1.6614
1720.	U-U0	7690.0	7694.1	7712.7	7737.0	7762.5	7789.3	7817.5	7847.1	7878.2	7910.8	7945.4
	H-H0	10566.	10594.	10721.	10886.	11059.	11241.	11432.	11633.	11844.	12066.	12300.
	(S-S0)/R	4.7948	2.4866	0.8515	0.1258	-0.3130	-0.6346	-0.8923	-1.1099	-1.3000	-1.4703	-1.6255
1740.	U-U0	7809.1	7813.3	7832.1	7856.8	7882.6	7909.7	7938.3	7968.2	7999.7	8032.8	8067.7
	H-H0	10725.	10753.	10881.	11048.	11223.	11407.	11600.	11802.	12016.	12240.	12476.
	(S-S0)/R	4.8296	2.5213	0.8863	0.1606	-0.2783	-0.5995	-0.8572	-1.0746	-1.2647	-1.4348	-1.5899
1760.	U-U0	7928.6	7932.6	7951.9	7976.9	8003.0	8030.5	8059.4	8089.7	8121.6	8155.1	8190.3
	H-H0	10884.	10913.	11042.	11210.	11387.	11572.	11767.	11972.	12187.	12414.	12652.
	(S-S0)/R	4.8640	2.5557	0.9208	0.1952	-0.2434	-0.5648	-0.8223	-1.0397	-1.2296	-1.3996	-1.5546
1780.	U-U0	8048.5	8052.8	8072.1	8097.4	8123.9	8151.7	8180.9	8211.6	8243.8	8277.7	8313.4
	H-H0	11044.	11073.	11203.	11373.	11551.	11739.	11935.	12142.	12359.	12588.	12828.
	(S-S0)/R	4.8981	2.5898	0.9549	0.2294	-0.2090	-0.5303	-0.7878	-1.0052	-1.1948	-1.3647	-1.5196
1800.	U-U0	8168.8	8173.1	8192.7	8218.2	8245.0	8273.2	8302.7	8333.8	8366.4	8400.7	8436.8
	H-H0	11204.	11233.	11365.	11536.	11716.	11905.	12104.	12312.	12532.	12762.	13004.
	(S-S0)/R	4.9319	2.6237	0.9889	0.2634	-0.1749	-0.4961	-0.7535	-0.9707	-1.1604	-1.3301	-1.4849
1820.	U-U0	8289.4	8293.8	8313.6	8339.5	8366.6	8395.1	8425.0	8456.4	8489.4	8524.0	8560.5
	H-H0	11365.	11394.	11528.	11700.	11882.	12072.	12273.	12483.	12704.	12937.	13181.
	(S-S0)/R	4.9655	2.6572	1.0225	0.2971	-0.1411	-0.4623	-0.7195	-0.9366	-1.1262	-1.2958	-1.4505
1840.	U-U0	8410.5	8414.9	8434.9	8461.1	8488.5	8517.3	8547.5	8579.3	8612.7	8647.7	8684.6
	H-H0	11525.	11555.	11689.	11864.	12047.	12240.	12442.	12654.	12877.	13112.	13358.
	(S-S0)/R	4.9988	2.6905	1.0559	0.3306	-0.1076	-0.4286	-0.6858	-0.9027	-1.0922	-1.2618	-1.4164
1860.	U-U0	8531.8	8536.3	8556.6	8583.0	8610.8	8639.9	8670.5	8702.6	8736.3	8771.4	8809.1
	H-H0	11686.	11716.	11851.	12028.	12213.	12407.	12611.	12826.	13051.	13287.	13536.
	(S-S0)/R	5.0318	2.7236	1.0890	0.3638	-0.0743	-0.3953	-0.6523	-0.8692	-1.0586	-1.2281	-1.3825
1880.	U-U0	8653.5	8658.0	8678.6	8705.3	8733.4	8762.9	8794.0	8826.3	8860.4	8896.2	8933.9
	H-H0	11848.	11878.	12014.	12192.	12379.	12575.	12781.	12997.	13224.	13463.	13713.
	(S-S0)/R	5.0646	2.7564	1.1218	0.3967	-0.0413	-0.3622	-0.6191	-0.8359	-1.0252	-1.1946	-1.3489
1900.	U-U0	8775.6	8780.2	8800.9	8828.0	8856.4	8886.2	8917.4	8950.3	8984.7	9021.4	9059.0
	H-H0	12010.	12040.	12178.	12357.	12546.	12744.	12951.	13169.	13398.	13639.	13891.
	(S-S0)/R	5.0971	2.7889	1.1544	0.4294	-0.0085	-0.3293	-0.5862	-0.8029	-0.9921	-1.1613	-1.3156
1920.	U-U0	8898.1	8902.6	8923.6	8951.0	8979.7	9009.8	9041.4	9074.6	9109.4	9146.0	9184.5
	H-H0	12172.	12202.	12341.	12523.	12713.	12912.	13122.	13342.	13572.	13815.	14070.
	(S-S0)/R	5.1293	2.8212	1.1867	0.4618	0.0240	-0.2967	-0.5535	-0.7701	-0.9592	-1.1284	-1.2825
1940.	U-U0	9020.8	9025.5	9046.7	9074.3	9103.4	9133.8	9165.7	9199.3	9234.5	9271.5	9310.4
	H-H0	12334.	12365.	12505.	12688.	12880.	13081.	13293.	13514.	13747.	13991.	14248.
	(S-S0)/R	5.1614	2.8532	1.2188	0.4940	0.0562	-0.2644	-0.5211	-0.7376	-0.9266	-1.0956	-1.2497
1960.	U-U0	9143.9	9148.6	9170.1	9198.0	9227.4	9258.1	9290.4	9324.3	9359.9	9397.2	9436.5
	H-H0	12497.	12528.	12670.	12854.	13048.	13251.	13464.	13687.	13922.	14168.	14427.
	(S-S0)/R	5.1931	2.8850	1.2507	0.5259	0.0882	-0.2323	-0.4889	-0.7053	-0.8942	-1.0632	-1.2171
1980.	U-U0	9267.4	9272.1	9293.8	9322.1	9351.7	9382.8	9415.4	9449.7	9485.6	9523.3	9563.0
	H-H0	12660.	12692.	12835.	13021.	13216.	13420.	13635.	13860.	14097.	14346.	14607.
	(S-S0)/R	5.2247	2.9166	1.2823	0.5574	0.1200	-0.2004	-0.4569	-0.6733	-0.8621	-1.0309	-1.1848
2000.	U-U0	9391.1	9396.0	9417.9	9446.4	9476.4	9507.8	9540.8	9575.3	9611.6	9649.8	9689.8
	H-H0	12824.	12856.	13000.	13187.	13384.	13590.	13807.	14034.	14273.	14523.	14786.
	(S-S0)/R	5.2560	2.9479	1.3137	0.5891	0.1515	-0.1688	-0.4252	-0.6415	-0.8302	-0.9990	-1.1527
2020.	U-U0	9515.3	9520.1	9542.3	9571.1	9601.4	9633.1	9666.4	9701.6	9738.0	9776.5	9817.0
	H-H0	12988.	13020.	13165.	13354.	13553.	13761.	13978.	14208.	14448.	14701.	14966.
	(S-S0)/R	5.2871	2.9790	1.3449	0.6203	0.1829	-0.1374	-0.3938	-0.6099	-0.7985	-0.9672	-1.1208
2040.	U-U0	9639.7	9644.6	9667.0	9696.2	9726.7	9758.8	9792.4	9827.7	9864.7	9903.6	9944.5
	H-H0	13152.	13184.	13331.	13521.	13721.	13931.	14150.	14382.	14624.	14879.	15146.
	(S-S0)/R	5.3180	3.0099	1.3758	0.6513	0.2139	-0.1063	-0.3625	-0.5786	-0.7671	-0.9357	-1.0892

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT)										
		500.	550.	600.	650.	700.	750.	800.	850.	900.	950.	1000.
1540.	U-U0	6894.1	6928.2	6964.1	7002.3	7041.9	7084.1	7128.7	7175.8	7225.7	7278.4	7334.2
	H-H0	10961.	11198.	11448.	11713.	11992.	12287.	12598.	12927.	13275.	13642.	14032.
	(S-S0)/R	-2.1152	-2.2408	-2.3690	-2.4910	-2.6080	-2.7208	-2.8303	-2.9368	-3.0409	-3.1429	-3.2432
1560.	U-U0	7013.4	7047.9	7084.3	7122.7	7163.2	7205.9	7251.1	7298.0	7349.3	7402.7	7459.2
	H-H0	11136.	11376.	11629.	11896.	12177.	12475.	12789.	13121.	13472.	13844.	14236.
	(S-S0)/R	-2.0744	-2.2019	-2.3299	-2.4518	-2.5687	-2.6814	-2.7906	-2.8969	-3.0007	-3.1025	-3.2026
1580.	U-U0	7133.1	7168.1	7204.9	7243.8	7284.8	7328.1	7373.9	7422.2	7473.3	7527.3	7584.5
	H-H0	11311.	11553.	11809.	12078.	12363.	12663.	12980.	13315.	13669.	14044.	14440.
	(S-S0)/R	-2.0351	-2.1634	-2.2912	-2.4129	-2.5297	-2.6422	-2.7512	-2.8573	-2.9609	-3.0625	-3.1624
1600.	U-U0	7253.2	7288.6	7325.9	7365.3	7406.9	7450.7	7497.0	7545.9	7597.7	7652.3	7710.2
	H-H0	11486.	11731.	11989.	12261.	12548.	12851.	13171.	13509.	13867.	14245.	14644.
	(S-S0)/R	-1.9981	-2.1252	-2.2529	-2.3745	-2.4910	-2.6034	-2.7122	-2.8181	-2.9216	-3.0229	-3.1226
1620.	U-U0	7373.6	7409.5	7447.3	7487.2	7529.3	7573.7	7620.5	7670.1	7722.4	7777.7	7836.3
	H-H0	11662.	11909.	12170.	12445.	12734.	13040.	13363.	13704.	14065.	14446.	14848.
	(S-S0)/R	-1.9524	-2.0874	-2.2149	-2.3364	-2.4527	-2.5649	-2.6734	-2.7793	-2.8826	-2.9837	-3.0832
1640.	U-U0	7494.4	7530.8	7569.1	7609.5	7652.1	7697.1	7744.4	7794.5	7847.5	7903.5	7962.7
	H-H0	11838.	12088.	12351.	12628.	12921.	13229.	13555.	13899.	14263.	14647.	15054.
	(S-S0)/R	-1.9151	-2.0499	-2.1773	-2.2986	-2.4148	-2.5268	-2.6353	-2.7409	-2.8439	-2.9449	-3.0441
1660.	U-U0	7615.7	7652.5	7691.2	7732.1	7775.2	7820.7	7868.7	7919.4	7973.0	8029.6	8089.5
	H-H0	12015.	12267.	12532.	12812.	13107.	13418.	13747.	14094.	14461.	14849.	15259.
	(S-S0)/R	-1.8781	-2.0128	-2.1400	-2.2612	-2.3772	-2.4891	-2.5974	-2.7028	-2.8056	-2.9064	-3.0055
1680.	U-U0	7737.3	7774.5	7813.8	7855.1	7898.7	7944.8	7993.3	8044.6	8098.8	8156.0	8216.6
	H-H0	12192.	12446.	12714.	12996.	13294.	13608.	13940.	14290.	14660.	15050.	15464.
	(S-S0)/R	-1.8414	-1.9760	-2.1031	-2.2241	-2.3400	-2.4517	-2.5599	-2.6650	-2.7677	-2.8683	-2.9671
1700.	U-U0	7859.2	7896.9	7936.7	7978.5	8022.6	8069.2	8118.3	8170.2	8225.0	8282.9	8344.1
	H-H0	12369.	12625.	12896.	13181.	13481.	13798.	14132.	14485.	14858.	15252.	15669.
	(S-S0)/R	-1.8051	-1.9395	-2.0665	-2.1873	-2.3031	-2.4146	-2.5229	-2.6276	-2.7301	-2.8305	-2.9292
1720.	U-U0	7981.4	8019.7	8059.9	8102.3	8146.9	8194.0	8243.7	8296.1	8351.5	8410.0	8471.9
	H-H0	12546.	12805.	13078.	13365.	13668.	13988.	14325.	14681.	15057.	15455.	15875.
	(S-S0)/R	-1.7691	-1.9034	-2.0302	-2.1509	-2.2665	-2.3779	-2.4857	-2.5906	-2.6929	-2.7931	-2.8915
1740.	U-U0	8104.3	8142.9	8183.6	8226.4	8271.5	8319.1	8369.4	8422.4	8478.4	8537.5	8600.1
	H-H0	12724.	12985.	13260.	13550.	13856.	14178.	14518.	14877.	15256.	15657.	16080.
	(S-S0)/R	-1.7334	-1.8675	-1.9942	-2.1148	-2.2302	-2.3415	-2.4491	-2.5538	-2.6560	-2.7560	-2.8542
1760.	U-U0	8227.4	8266.5	8307.6	8350.9	8396.5	8444.7	8495.4	8549.0	8605.6	8665.4	8728.6
	H-H0	12902.	13166.	13443.	13736.	14044.	14369.	14712.	15074.	15456.	15860.	16286.
	(S-S0)/R	-1.6979	-1.8320	-1.9586	-2.0790	-2.1943	-2.3054	-2.4129	-2.5174	-2.6193	-2.7192	-2.8173
1780.	U-U0	8350.9	8390.4	8431.9	8475.7	8521.9	8570.5	8621.9	8676.0	8733.2	8793.6	8857.5
	H-H0	13080.	13346.	13626.	13921.	14232.	14560.	14906.	15270.	15655.	16062.	16492.
	(S-S0)/R	-1.6628	-1.7968	-1.9232	-2.0435	-2.1586	-2.2696	-2.3769	-2.4813	-2.5831	-2.6827	-2.7806
1800.	U-U0	8474.7	8514.4	8556.6	8600.9	8647.6	8696.8	8748.6	8803.4	8861.1	8922.2	8986.7
	H-H0	13259.	13527.	13810.	14107.	14421.	14751.	15099.	15467.	15855.	16265.	16699.
	(S-S0)/R	-1.6280	-1.7618	-1.8881	-2.0083	-2.1233	-2.2341	-2.3413	-2.4454	-2.5471	-2.6466	-2.7443
1820.	U-U0	8598.9	8639.2	8681.7	8726.5	8773.6	8823.3	8875.7	8931.0	8989.4	9051.1	9116.2
	H-H0	13438.	13709.	13993.	14293.	14609.	14942.	15294.	15664.	16055.	16469.	16905.
	(S-S0)/R	-1.5935	-1.7272	-1.8533	-1.9733	-2.0882	-2.1989	-2.3059	-2.4099	-2.5114	-2.6107	-2.7082
1840.	U-U0	8723.4	8764.2	8807.1	8852.4	8900.0	8950.2	9003.2	9059.1	9118.0	9180.3	9246.0
	H-H0	13617.	13890.	14177.	14480.	14798.	15134.	15488.	15862.	16256.	16672.	17112.
	(S-S0)/R	-1.5592	-1.6928	-1.8188	-1.9387	-2.0535	-2.1639	-2.2708	-2.3747	-2.4760	-2.5752	-2.6725
1860.	U-U0	8848.3	8889.5	8932.9	8978.6	9026.8	9077.5	9131.0	9187.6	9247.0	9309.8	9376.2
	H-H0	13797.	14072.	14362.	14666.	14988.	15326.	15683.	16059.	16456.	16876.	17318.
	(S-S0)/R	-1.5252	-1.6587	-1.7846	-1.9043	-2.0190	-2.1293	-2.2361	-2.3398	-2.4409	-2.5399	-2.6371
1880.	U-U0	8973.5	9015.2	9059.0	9105.2	9153.8	9205.1	9259.1	9316.5	9376.2	9439.7	9506.8
	H-H0	13977.	14254.	14546.	14853.	15177.	15518.	15878.	16257.	16657.	17079.	17525.
	(S-S0)/R	-1.4915	-1.6248	-1.7506	-1.8703	-1.9848	-2.0950	-2.2016	-2.3051	-2.4061	-2.5050	-2.6020
1900.	U-U0	9099.1	9141.2	9185.5	9232.1	9281.3	9333.0	9387.6	9445.1	9505.8	9569.9	9637.6
	H-H0	14157.	14437.	14731.	15041.	15367.	15711.	16073.	16455.	16858.	17283.	17733.
	(S-S0)/R	-1.4581	-1.5913	-1.7170	-1.8365	-1.9508	-2.0609	-2.1674	-2.2708	-2.3716	-2.4703	-2.5671
1920.	U-U0	9225.0	9267.5	9312.3	9359.4	9409.0	9461.3	9516.4	9574.5	9635.8	9700.4	9768.7
	H-H0	14338.	14620.	14916.	15228.	15557.	15903.	16268.	16653.	17059.	17488.	17940.
	(S-S0)/R	-1.4249	-1.5580	-1.6835	-1.8029	-1.9171	-2.0271	-2.1334	-2.2367	-2.3374	-2.4359	-2.5325
1940.	U-U0	9351.2	9394.2	9439.4	9487.0	9537.1	9589.9	9645.5	9704.2	9766.0	9831.3	9900.2
	H-H0	14519.	14803.	15101.	15416.	15747.	16096.	16464.	16852.	17260.	17692.	18148.
	(S-S0)/R	-1.3920	-1.5249	-1.6504	-1.7696	-1.8837	-1.9935	-2.0997	-2.2029	-2.3034	-2.4017	-2.4982
1960.	U-U0	9477.8	9521.2	9566.9	9614.9	9665.5	9718.8	9775.0	9834.1	9896.6	9962.5	10032.
	H-H0	14700.	14986.	15287.	15604.	15938.	16289.	16660.	17050.	17462.	17897.	18355.
	(S-S0)/R	-1.3593	-1.4922	-1.6175	-1.7366	-1.8506	-1.9603	-2.0663	-2.1693	-2.2697	-2.3679	-2.4644
1980.	U-U0	9604.7	9648.5	9694.6	9743.2	9794.2	9848.0	9904.7	9964.5	10027.	10094.	10164.
	H-H0	14881.	15170.	15473.	15792.	16129.	16483.	16856.	17249.	17664.	18101.	18563.
	(S-S0)/R	-1.3268	-1.4596	-1.5848	-1.7038	-1.8177	-1.9277	-2.0331	-2.1360	-2.2362	-2.3341	-2.4305
2000.	U-U0	9731.9	9776.2	9822.8	9871.7	9923.3	9977.6	10035.	10095.	10159.	10226.	10296.
	H-H0	15063.	15353.	15659.	15981.	16320.	16676.	17052.	17448.	17866.	18306.	18771.
	(S-S0)/R	-1.2947	-1.4273	-1.5524	-1.6713	-1.7850	-1.8945	-2.0002	-2.1028	-2.2031	-2.3009	-2.3970
2020.	U-U0	9859.5	9904.2	9951.2	10001.	10053.	10107.	10165.	10226.	10290.	10358.	10429.
	H-H0	15245.	15538.	15846.	16170.	16511.	16870.	17249.	17648.	18068.	18512.	18980.
	(S-S0)/R	-1.2627	-1.3953	-1.5202	-1.6390	-1.7526	-1.8619	-1.9675	-2.0702	-2.1701	-2.2679	-2.3637
2040.	U-U0	9987.4	10032.	10080.	10130.	10182.	10238.	10296.	10357.	10422.	10490.	10562.
	H-H0	15427.	15722.	16032.	16359.	16703.	17064.	17446.	17847.	18270.	18717.	19188.
	(S-S0)/R	-1.2310	-1.3634	-1.4883	-1.6070	-1.7205	-1.8290	-1.9354	-2.0376	-2.1374	-2.2350	-2.3307

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT)										
		1050.	1100.	1150.	1200.	1250.	1300.	1350.	1400.	1450.	1500.	1550.
1540.	U-U0	7393.3	7455.9	7522.3	7592.8	7667.6	7747.1	7831.5	7921.3	8016.9	8118.8	8227.3
	H-H0	14444.	14881.	15345.	15837.	16359.	16913.	17502.	18128.	18794.	19507.	20264.
	(S-S0)/R	-3.3421	-3.4389	-3.5368	-3.6331	-3.7288	-3.8242	-3.9195	-4.0147	-4.1100	-4.2055	-4.3013
1560.	U-U0	7519.8	7582.4	7649.6	7720.9	7796.5	7876.9	7962.3	8053.1	8149.8	8252.7	8362.4
	H-H0	14652.	15093.	15560.	16056.	16582.	17141.	17735.	18367.	19039.	19755.	20517.
	(S-S0)/R	-3.3013	-3.3986	-3.4955	-3.5915	-3.6869	-3.7820	-3.8770	-3.9719	-4.0666	-4.1620	-4.2574
1580.	U-U0	7645.1	7709.2	7777.2	7849.1	7925.8	8007.1	8093.4	8185.2	8282.9	8386.9	8497.7
	H-H0	14860.	15304.	15774.	16276.	16806.	17369.	17968.	18604.	19281.	20002.	20778.
	(S-S0)/R	-3.2609	-3.3582	-3.4546	-3.5503	-3.6455	-3.7403	-3.8349	-3.9295	-4.0241	-4.1189	-4.2140
1600.	U-U0	7771.5	7836.4	7905.1	7978.0	8055.4	8137.6	8224.9	8317.6	8416.4	8521.4	8633.3
	H-H0	15068.	15516.	15991.	16495.	17030.	17597.	18201.	18842.	19524.	20250.	21023.
	(S-S0)/R	-3.2208	-3.3179	-3.4141	-3.5095	-3.6044	-3.6990	-3.7933	-3.8876	-3.9819	-4.0763	-4.1711
1620.	U-U0	7898.2	7963.9	8033.4	8107.1	8185.4	8268.4	8356.6	8450.4	8550.1	8656.2	8769.3
	H-H0	15276.	15728.	16207.	16715.	17254.	17826.	18433.	19079.	19768.	20497.	21276.
	(S-S0)/R	-3.1812	-3.2781	-3.3740	-3.4692	-3.5636	-3.6581	-3.7521	-3.8461	-3.9400	-4.0342	-4.1286
1640.	U-U0	8025.4	8091.7	8162.0	8236.6	8315.7	8399.6	8488.7	8583.4	8684.2	8791.4	8905.5
	H-H0	15484.	15940.	16423.	16935.	17478.	18054.	18666.	19317.	20008.	20744.	21528.
	(S-S0)/R	-3.1410	-3.2386	-3.3342	-3.4292	-3.5236	-3.6176	-3.7113	-3.8050	-3.8988	-3.9925	-4.0865
1660.	U-U0	8152.8	8219.9	8291.0	8366.4	8446.3	8531.1	8621.1	8716.8	8818.5	8926.8	9042.0
	H-H0	15693.	16152.	16638.	17155.	17702.	18282.	18899.	19554.	20250.	20991.	21780.
	(S-S0)/R	-3.1030	-3.1994	-3.2949	-3.3896	-3.4837	-3.5774	-3.6709	-3.7643	-3.8576	-3.9511	-4.0449
1680.	U-U0	8280.7	8348.5	8420.3	8496.5	8577.2	8662.9	8753.8	8850.5	8953.2	9062.5	9178.8
	H-H0	15901.	16364.	16855.	17375.	17926.	18511.	19132.	19791.	20493.	21239.	22033.
	(S-S0)/R	-3.0645	-3.1607	-3.2559	-3.3504	-3.4442	-3.5377	-3.6309	-3.7240	-3.8170	-3.9102	-4.0036
1700.	U-U0	8408.8	8477.4	8550.0	8626.9	8708.5	8795.0	8886.9	8984.5	9088.2	9198.5	9315.9
	H-H0	16110.	16577.	17071.	17595.	18150.	18739.	19364.	20029.	20735.	21486.	22285.
	(S-S0)/R	-3.0263	-3.1223	-3.2173	-3.3115	-3.4051	-3.4983	-3.5913	-3.6841	-3.7768	-3.8697	-3.9628
1720.	U-U0	8537.4	8606.6	8680.0	8757.7	8840.1	8927.5	9020.2	9118.8	9223.4	9334.8	9453.3
	H-H0	16319.	16789.	17287.	17815.	18374.	18967.	19597.	20266.	20977.	21732.	22537.
	(S-S0)/R	-2.9885	-3.0842	-3.1790	-3.2730	-3.3664	-3.4593	-3.5520	-3.6445	-3.7370	-3.8296	-3.9223
1740.	U-U0	8666.2	8736.2	8810.3	8888.8	8972.0	9060.3	9153.9	9253.3	9359.0	9471.4	9590.9
	H-H0	16528.	17002.	17504.	18035.	18598.	19196.	19830.	20503.	21219.	21979.	22789.
	(S-S0)/R	-2.9510	-3.0465	-3.1411	-3.2349	-3.3280	-3.4207	-3.5131	-3.6054	-3.6976	-3.7898	-3.8823
1760.	U-U0	8795.4	8866.1	8941.8	9020.2	9104.1	9193.3	9287.9	9388.2	9494.9	9608.2	9728.8
	H-H0	16737.	17215.	17720.	18256.	18823.	19424.	20063.	20741.	21461.	22226.	23040.
	(S-S0)/R	-2.9138	-3.0092	-3.1035	-3.1970	-3.2900	-3.3824	-3.4746	-3.5666	-3.6585	-3.7505	-3.8426
1780.	U-U0	8925.0	8996.4	9071.9	9152.0	9236.8	9326.0	9422.2	9523.5	9631.6	9745.4	9867.0
	H-H0	16947.	17428.	17937.	18478.	19047.	19653.	20296.	20978.	21702.	22473.	23292.
	(S-S0)/R	-2.8770	-2.9721	-3.0662	-3.1596	-3.2523	-3.3445	-3.4364	-3.5281	-3.6198	-3.7115	-3.8033
1800.	U-U0	9054.8	9126.9	9203.3	9284.1	9369.7	9460.5	9556.8	9659.0	9767.5	9882.0	10006.
	H-H0	17157.	17641.	18154.	18697.	19272.	19882.	20531.	21215.	21944.	22719.	23543.
	(S-S0)/R	-2.8405	-2.9354	-3.0293	-3.1224	-3.2148	-3.3069	-3.3985	-3.4900	-3.5814	-3.6728	-3.7644
1820.	U-U0	9185.0	9257.8	9334.9	9416.5	9502.9	9594.5	9691.6	9794.6	9904.2	10021.	10144.
	H-H0	17366.	17854.	18371.	18917.	19497.	20110.	20762.	21452.	22186.	22966.	23795.
	(S-S0)/R	-2.8042	-2.8990	-2.9927	-3.0856	-3.1778	-3.2696	-3.3610	-3.4522	-3.5433	-3.6345	-3.7258
1840.	U-U0	9315.6	9389.1	9466.8	9549.2	9636.4	9728.8	9826.9	9930.8	10041.	10159.	10283.
	H-H0	17576.	18068.	18588.	19138.	19722.	20339.	20994.	21690.	22428.	23212.	24048.
	(S-S0)/R	-2.7683	-2.8629	-2.9564	-3.0491	-3.1411	-3.2326	-3.3238	-3.4148	-3.5056	-3.5965	-3.6875
1860.	U-U0	9446.4	9520.6	9599.1	9682.2	9770.2	9863.5	9962.3	10067.	10179.	10297.	10423.
	H-H0	17786.	18281.	18805.	19359.	19946.	20568.	21228.	21927.	22670.	23459.	24298.
	(S-S0)/R	-2.7327	-2.8271	-2.9204	-3.0129	-3.1047	-3.1960	-3.2870	-3.3777	-3.4683	-3.5589	-3.6496
1880.	U-U0	9577.6	9652.5	9731.7	9815.9	9904.3	9998.4	10098.	10204.	10316.	10435.	10562.
	H-H0	17997.	18495.	19022.	19580.	20171.	20797.	21461.	22165.	22912.	23705.	24549.
	(S-S0)/R	-2.6974	-2.7916	-2.8847	-2.9770	-3.0688	-3.1597	-3.2504	-3.3409	-3.4312	-3.5216	-3.6120
1900.	U-U0	9709.1	9784.7	9864.6	9949.2	10039.	10134.	10234.	10341.	10454.	10574.	10702.
	H-H0	18207.	18709.	19240.	19801.	20396.	21026.	21694.	22402.	23154.	23952.	24800.
	(S-S0)/R	-2.6624	-2.7564	-2.8493	-2.9414	-3.0328	-3.1237	-3.2142	-3.3044	-3.3945	-3.4846	-3.5748
1920.	U-U0	9840.0	9917.2	9997.8	10083.	10173.	10269.	10371.	10478.	10592.	10713.	10842.
	H-H0	18418.	18923.	19457.	20023.	20621.	21255.	21927.	22639.	23395.	24198.	25051.
	(S-S0)/R	-2.6270	-2.7215	-2.8142	-2.9061	-2.9973	-3.0879	-3.1782	-3.2682	-3.3581	-3.4479	-3.5378
1940.	U-U0	9973.0	10050.	10131.	10217.	10308.	10405.	10507.	10616.	10731.	10854.	10983.
	H-H0	18629.	19137.	19675.	20244.	20846.	21484.	22160.	22877.	23637.	24444.	25302.
	(S-S0)/R	-2.5917	-2.6864	-2.7794	-2.8711	-2.9621	-3.0525	-3.1426	-3.2323	-3.3220	-3.4116	-3.5012
1960.	U-U0	10105.	10183.	10265.	10352.	10444.	10541.	10644.	10753.	10869.	10992.	11123.
	H-H0	18840.	19352.	19893.	20466.	21072.	21713.	22393.	23114.	23878.	24691.	25553.
	(S-S0)/R	-2.5580	-2.6525	-2.7448	-2.8363	-2.9271	-3.0174	-3.1072	-3.1968	-3.2862	-3.3755	-3.4649
1980.	U-U0	10238.	10316.	10399.	10487.	10579.	10677.	10781.	10892.	11008.	11132.	11264.
	H-H0	19051.	19566.	20111.	20687.	21297.	21943.	22627.	23352.	24121.	24937.	25804.
	(S-S0)/R	-2.5251	-2.6184	-2.7106	-2.8019	-2.8925	-2.9825	-3.0721	-3.1615	-3.2507	-3.3398	-3.4289
2000.	U-U0	10371.	10450.	10534.	10622.	10715.	10814.	10919.	11030.	11148.	11272.	11405.
	H-H0	19262.	19781.	20329.	20909.	21522.	22172.	22860.	23589.	24363.	25184.	26055.
	(S-S0)/R	-2.4914	-2.5845	-2.6766	-2.7677	-2.8581	-2.9479	-3.0374	-3.1265	-3.2154	-3.3043	-3.3932
2020.	U-U0	10505.	10584.	10668.	10757.	10851.	10951.	11057.	11169.	11287.	11412.	11547.
	H-H0	19474.	19996.	20547.	21131.	21748.	22401.	23093.	23827.	24604.	25429.	26306.
	(S-S0)/R	-2.4580	-2.5512	-2.6428	-2.7338	-2.8240	-2.9136	-3.0028	-3.0918	-3.1805	-3.2691	-3.3578
2040.	U-U0	10638.	10718.	10803.	10893.	10988.	11088.	11195.	11307.	11427.	11554.	11688.
	H-H0	19685.	20211.	20766.	21353.	21974.	22631.	23327.	24064.	24846.	25678.	26556.
	(S-S0)/R	-2.4249	-2.5177	-2.6094	-2.7001	-2.7902	-2.8796	-2.9686	-3.0573	-3.1458	-3.2342	-3.3227

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT)								
		1600.	1650.	1700.	1750.	1800.	1850.	1900.	1950.	2000.
1540.	U-U0	8343.6	8466.6	8598.6	8739.7	8891.7	9052.5	9225.6	9411.8	9611.5
	H-H0	21072.	21934.	22856.	23840.	24894.	26023.	27233.	28530.	29926.
	(S-S0)/R	-4.3974	-4.4943	-4.5917	-4.6897	-4.7885	-4.8881	-4.9886	-5.0899	-5.1922
1560.	U-U0	8479.3	8604.1	8737.6	8879.9	9032.4	9195.6	9370.5	9558.2	9759.6
	H-H0	21331.	22199.	23124.	24117.	25177.	26313.	27529.	28834.	30235.
	(S-S0)/R	-4.3533	-4.4497	-4.5466	-4.6442	-4.7425	-4.8416	-4.9416	-5.0424	-5.1441
1580.	U-U0	8615.5	8741.9	8876.5	9020.4	9174.2	9338.6	9515.4	9704.7	9907.8
	H-H0	21588.	22465.	23396.	24394.	25460.	26602.	27825.	29137.	30545.
	(S-S0)/R	-4.3085	-4.4055	-4.5028	-4.5992	-4.6970	-4.7957	-4.8951	-4.9954	-5.0964
1600.	U-U0	8752.7	8880.8	9015.0	9161.1	9316.3	9482.5	9660.5	9851.4	10056.
	H-H0	21848.	22727.	23666.	24669.	25742.	26891.	28121.	29440.	30855.
	(S-S0)/R	-4.2662	-4.3618	-4.4579	-4.5546	-4.6520	-4.7502	-4.8492	-4.9490	-5.0496
1620.	U-U0	8889.6	9018.3	9155.4	9302.0	9458.7	9626.5	9807.8	9998.5	10205.
	H-H0	22106.	22991.	23936.	24945.	26024.	27170.	28414.	29741.	31164.
	(S-S0)/R	-4.2233	-4.3185	-4.4142	-4.5106	-4.6075	-4.7052	-4.8037	-4.9030	-5.0032
1640.	U-U0	9027.1	9156.9	9295.3	9443.2	9601.2	9770.3	9951.4	10145.	10354.
	H-H0	22363.	23254.	24205.	25220.	26306.	27467.	28712.	30043.	31472.
	(S-S0)/R	-4.1809	-4.2757	-4.3710	-4.4670	-4.5635	-4.6608	-4.7588	-4.8576	-4.9572
1660.	U-U0	9164.8	9295.7	9435.4	9584.6	9744.8	9914.5	10097.	10293.	10502.
	H-H0	22621.	23517.	24474.	25495.	26587.	27754.	29004.	30343.	31779.
	(S-S0)/R	-4.1389	-4.2334	-4.3283	-4.4238	-4.5199	-4.6168	-4.7143	-4.8127	-4.9118
1680.	U-U0	9302.7	9434.6	9575.8	9726.2	9887.0	10059.	10243.	10440.	10651.
	H-H0	22879.	23781.	24743.	25770.	26867.	28041.	29297.	30643.	32086.
	(S-S0)/R	-4.0973	-4.1916	-4.2868	-4.3811	-4.4768	-4.5732	-4.6704	-4.7682	-4.8669
1700.	U-U0	9440.9	9574.2	9716.4	9868.1	10030.	10204.	10389.	10588.	10801.
	H-H0	23136.	24043.	25011.	26044.	27148.	28328.	29590.	30943.	32392.
	(S-S0)/R	-4.0561	-4.1499	-4.2441	-4.3388	-4.4342	-4.5301	-4.6268	-4.7242	-4.8224
1720.	U-U0	9579.4	9713.9	9857.2	10010.	10174.	10348.	10535.	10736.	10950.
	H-H0	23393.	24306.	25279.	26318.	27428.	28614.	29883.	31242.	32698.
	(S-S0)/R	-4.0150	-4.1088	-4.2026	-4.2970	-4.3919	-4.4875	-4.5838	-4.6807	-4.7784
1740.	U-U0	9718.2	9853.8	9998.4	10153.	10317.	10494.	10682.	10884.	11100.
	H-H0	23650.	24568.	25547.	26592.	27707.	28900.	30175.	31540.	33003.
	(S-S0)/R	-3.9750	-4.0681	-4.1616	-4.2556	-4.3501	-4.4453	-4.5411	-4.6377	-4.7349
1760.	U-U0	9857.2	9994.0	10140.	10295.	10461.	10639.	10829.	11032.	11248.
	H-H0	23907.	24831.	25815.	26865.	27987.	29185.	30467.	31838.	33308.
	(S-S0)/R	-3.9350	-4.0277	-4.1209	-4.2145	-4.3087	-4.4035	-4.4989	-4.5950	-4.6918
1780.	U-U0	9996.5	10134.	10281.	10438.	10606.	10784.	10976.	11180.	11398.
	H-H0	24164.	25093.	26083.	27138.	28266.	29470.	30758.	32136.	33612.
	(S-S0)/R	-3.8954	-3.9878	-4.0806	-4.1739	-4.2677	-4.3621	-4.4571	-4.5528	-4.6492
1800.	U-U0	10136.	10275.	10423.	10581.	10750.	10930.	11123.	11329.	11549.
	H-H0	24421.	25355.	26350.	27411.	28544.	29755.	31048.	32433.	33915.
	(S-S0)/R	-3.8561	-3.9482	-4.0407	-4.1336	-4.2271	-4.3211	-4.4157	-4.5110	-4.6070
1820.	U-U0	10276.	10416.	10565.	10725.	10895.	11076.	11270.	11477.	11700.
	H-H0	24677.	25616.	26617.	27684.	28823.	30039.	31339.	32729.	34218.
	(S-S0)/R	-3.8172	-3.9090	-4.0012	-4.0938	-4.1869	-4.2805	-4.3748	-4.4697	-4.5652
1840.	U-U0	10416.	10557.	10708.	10868.	11039.	11222.	11418.	11626.	11850.
	H-H0	24933.	25878.	26884.	27957.	29101.	30323.	31629.	33026.	34521.
	(S-S0)/R	-3.7787	-3.8702	-3.9620	-4.0543	-4.1470	-4.2403	-4.3342	-4.4287	-4.5238
1860.	U-U0	10556.	10699.	10850.	11012.	11184.	11369.	11565.	11776.	12001.
	H-H0	25190.	26139.	27151.	28229.	29379.	30607.	31919.	33321.	34823.
	(S-S0)/R	-3.7405	-3.8317	-3.9232	-4.0151	-4.1075	-4.2005	-4.2940	-4.3881	-4.4828
1880.	U-U0	10697.	10840.	10993.	11156.	11330.	11515.	11713.	11925.	12151.
	H-H0	25446.	26400.	27417.	28501.	29656.	30890.	32208.	33617.	35124.
	(S-S0)/R	-3.7026	-3.7935	-3.8847	-3.9763	-4.0684	-4.1610	-4.2542	-4.3478	-4.4422
1900.	U-U0	10838.	10982.	11136.	11300.	11475.	11662.	11861.	12074.	12302.
	H-H0	25702.	26662.	27684.	28773.	29934.	31173.	32497.	33912.	35425.
	(S-S0)/R	-3.6651	-3.7557	-3.8466	-3.9379	-4.0297	-4.1219	-4.2147	-4.3081	-4.4020
1920.	U-U0	10979.	11125.	11280.	11445.	11621.	11809.	12010.	12224.	12454.
	H-H0	25958.	26923.	27950.	29044.	30211.	31456.	32785.	34206.	35726.
	(S-S0)/R	-3.6279	-3.7182	-3.8088	-3.8998	-3.9912	-4.0832	-4.1756	-4.2686	-4.3622
1940.	U-U0	11120.	11267.	11423.	11590.	11767.	11956.	12158.	12374.	12605.
	H-H0	26214.	27183.	28216.	29315.	30488.	31738.	33074.	34500.	36026.
	(S-S0)/R	-3.5910	-3.6810	-3.7714	-3.8621	-3.9532	-4.0447	-4.1368	-4.2295	-4.3227
1960.	U-U0	11262.	11410.	11567.	11735.	11913.	12104.	12307.	12524.	12756.
	H-H0	26469.	27444.	28482.	29587.	30764.	32020.	33361.	34794.	36326.
	(S-S0)/R	-3.5545	-3.6442	-3.7342	-3.8246	-3.9154	-4.0067	-4.0984	-4.1907	-4.2836
1980.	U-U0	11404.	11553.	11711.	11880.	12060.	12251.	12456.	12674.	12908.
	H-H0	26725.	27705.	28747.	29858.	31041.	32302.	33649.	35088.	36625.
	(S-S0)/R	-3.5182	-3.6077	-3.6974	-3.7875	-3.8780	-3.9690	-4.0604	-4.1523	-4.2448
2000.	U-U0	11546.	11696.	11856.	12025.	12206.	12399.	12605.	12825.	13060.
	H-H0	26981.	27965.	29013.	30128.	31317.	32584.	33936.	35381.	36924.
	(S-S0)/R	-3.4822	-3.5714	-3.6609	-3.7507	-3.8409	-3.9315	-4.0227	-4.1143	-4.2066
2020.	U-U0	11689.	11840.	12000.	12171.	12353.	12547.	12754.	12976.	13212.
	H-H0	27236.	28226.	29278.	30399.	31593.	32865.	34223.	35673.	37223.
	(S-S0)/R	-3.4466	-3.5355	-3.6247	-3.7142	-3.8041	-3.8945	-3.9853	-4.0765	-4.1684
2040.	U-U0	11831.	11983.	12145.	12317.	12500.	12696.	12904.	13126.	13364.
	H-H0	27492.	28486.	29544.	30669.	31868.	33147.	34510.	35966.	37521.
	(S-S0)/R	-3.4112	-3.4999	-3.5888	-3.6781	-3.7677	-3.8577	-3.9482	-4.0391	-4.1306

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY (AMAGAT)										
		1.	10.	50.	100.	150.	200.	250.	300.	350.	400.	450.
2060.	U-U0	9764.5	9770.4	9792.8	9821.5	9852.4	9884.8	9918.7	9954.3	9991.7	10031.	10072.
	H-H0	13317.	13349.	13497.	13689.	13893.	14102.	14324.	14557.	14801.	15057.	15326.
	(S-S0)/R	5.3466	3.0405	1.4065	0.6821	0.2448	-0.0755	-0.3315	-0.5475	-0.7359	-0.9044	-1.0570
2080.	U-U0	9887.6	9894.6	9917.5	9947.2	9978.4	10011.	10045.	10081.	10119.	10159.	10208.
	H-H0	13481.	13514.	13663.	13857.	14060.	14273.	14497.	14731.	14977.	15236.	15507.
	(S-S0)/R	5.3790	3.0719	1.4378	0.7127	0.2756	-0.0446	-0.3007	-0.5166	-0.7050	-0.8734	-1.0262
2100.	U-U0	10015.	10020.	10043.	10073.	10105.	10138.	10172.	10209.	10247.	10287.	10329.
	H-H0	13647.	13680.	13830.	14025.	14230.	14445.	14670.	14906.	15154.	15415.	15688.
	(S-S0)/R	5.4092	3.1012	1.4673	0.7430	0.3058	-0.0141	-0.2702	-0.4859	-0.6742	-0.8425	-0.9958
2120.	U-U0	10141.	10146.	10169.	10199.	10231.	10265.	10300.	10336.	10375.	10415.	10457.
	H-H0	13812.	13845.	13997.	14194.	14400.	14617.	14844.	15082.	15332.	15594.	15869.
	(S-S0)/R	5.4392	3.1312	1.4973	0.7731	0.3361	0.0162	-0.2398	-0.4555	-0.6437	-0.8119	-0.9650
2140.	U-U0	10267.	10272.	10295.	10326.	10358.	10392.	10427.	10464.	10503.	10544.	10586.
	H-H0	13978.	14011.	14164.	14362.	14571.	14789.	15018.	15257.	15509.	15773.	16051.
	(S-S0)/R	5.4690	3.1610	1.5272	0.8031	0.3660	0.0462	-0.2096	-0.4253	-0.6134	-0.7815	-0.9347
2160.	U-U0	10393.	10398.	10422.	10453.	10485.	10519.	10555.	10592.	10631.	10673.	10716.
	H-H0	14144.	14178.	14331.	14532.	14741.	14961.	15192.	15433.	15687.	15953.	16233.
	(S-S0)/R	5.4986	3.1906	1.5568	0.8328	0.3956	0.0761	-0.1797	-0.3952	-0.5833	-0.7513	-0.9043
2180.	U-U0	10520.	10525.	10549.	10580.	10613.	10647.	10683.	10721.	10760.	10802.	10845.
	H-H0	14310.	14344.	14498.	14701.	14912.	15134.	15366.	15610.	15865.	16133.	16415.
	(S-S0)/R	5.5280	3.2200	1.5863	0.8623	0.4254	0.1058	-0.1499	-0.3654	-0.5534	-0.7213	-0.8742
2200.	U-U0	10647.	10652.	10676.	10708.	10741.	10775.	10812.	10850.	10890.	10932.	10975.
	H-H0	14477.	14511.	14667.	14871.	15084.	15307.	15541.	15786.	16043.	16313.	16597.
	(S-S0)/R	5.5571	3.2492	1.6155	0.8916	0.4548	0.1352	-0.1204	-0.3358	-0.5237	-0.6916	-0.8443
2220.	U-U0	10774.	10779.	10804.	10835.	10869.	10904.	10940.	10979.	11019.	11061.	11106.
	H-H0	14644.	14679.	14836.	15041.	15255.	15480.	15716.	15963.	16222.	16494.	16779.
	(S-S0)/R	5.5861	3.2782	1.6445	0.9207	0.4840	0.1645	-0.0911	-0.3064	-0.4942	-0.6620	-0.8147
2240.	U-U0	10901.	10907.	10931.	10964.	10997.	11032.	11069.	11108.	11149.	11191.	11236.
	H-H0	14811.	14846.	15005.	15211.	15427.	15654.	15891.	16140.	16401.	16675.	16962.
	(S-S0)/R	5.6149	3.3070	1.6734	0.9496	0.5130	0.1935	-0.0620	-0.2772	-0.4648	-0.6326	-0.7852
2260.	U-U0	11029.	11035.	11060.	11092.	11126.	11161.	11199.	11238.	11279.	11322.	11367.
	H-H0	14979.	15014.	15174.	15382.	15599.	15827.	16067.	16317.	16580.	16856.	17145.
	(S-S0)/R	5.6435	3.3356	1.7021	0.9783	0.5418	0.2224	-0.0330	-0.2482	-0.4358	-0.6034	-0.7560
2280.	U-U0	11157.	11163.	11188.	11221.	11255.	11291.	11328.	11368.	11409.	11452.	11498.
	H-H0	15147.	15182.	15343.	15552.	15772.	16002.	16242.	16495.	16760.	17037.	17329.
	(S-S0)/R	5.6719	3.3640	1.7305	1.0069	0.5704	0.2511	-0.0043	-0.2194	-0.4069	-0.5745	-0.7269
2300.	U-U0	11286.	11291.	11317.	11350.	11384.	11420.	11458.	11498.	11540.	11583.	11629.
	H-H0	15315.	15350.	15512.	15723.	15944.	16176.	16418.	16673.	16939.	17219.	17512.
	(S-S0)/R	5.7002	3.3922	1.7588	1.0352	0.5988	0.2795	0.0243	-0.1908	-0.3782	-0.5457	-0.6980
2320.	U-U0	11414.	11420.	11446.	11479.	11514.	11550.	11588.	11628.	11670.	11714.	11761.
	H-H0	15483.	15519.	15682.	15895.	16117.	16351.	16595.	16851.	17119.	17401.	17696.
	(S-S0)/R	5.7282	3.4203	1.7869	1.0634	0.6270	0.3078	0.0526	-0.1623	-0.3497	-0.5171	-0.6694
2340.	U-U0	11543.	11549.	11575.	11608.	11643.	11680.	11719.	11759.	11802.	11846.	11893.
	H-H0	15652.	15688.	15852.	16067.	16291.	16525.	16771.	17029.	17299.	17583.	17880.
	(S-S0)/R	5.7561	3.4481	1.8148	1.0914	0.6551	0.3360	0.0808	-0.1341	-0.3214	-0.4887	-0.6409
2360.	U-U0	11673.	11678.	11704.	11738.	11774.	11811.	11850.	11890.	11933.	11978.	12025.
	H-H0	15821.	15857.	16023.	16238.	16463.	16701.	16948.	17208.	17480.	17765.	18064.
	(S-S0)/R	5.7837	3.4758	1.8424	1.1192	0.6829	0.3639	0.1088	-0.1060	-0.2932	-0.4604	-0.6126
2380.	U-U0	11802.	11808.	11834.	11868.	11904.	11941.	11980.	12022.	12065.	12110.	12157.
	H-H0	15990.	16027.	16194.	16411.	16638.	16876.	17125.	17387.	17660.	17948.	18249.
	(S-S0)/R	5.8112	3.5034	1.8701	1.1468	0.7106	0.3916	0.1367	-0.0781	-0.2653	-0.4324	-0.5844
2400.	U-U0	11932.	11938.	11964.	11998.	12034.	12072.	12112.	12153.	12197.	12242.	12290.
	H-H0	16160.	16197.	16365.	16583.	16812.	17052.	17303.	17566.	17841.	18130.	18433.
	(S-S0)/R	5.8386	3.5307	1.8975	1.1742	0.7381	0.4192	0.1643	-0.0504	-0.2375	-0.4045	-0.5563
2420.	U-U0	12062.	12068.	12094.	12129.	12165.	12203.	12243.	12285.	12329.	12375.	12423.
	H-H0	16329.	16367.	16536.	16755.	16986.	17228.	17480.	17745.	18022.	18313.	18618.
	(S-S0)/R	5.8657	3.5579	1.9247	1.2015	0.7655	0.4466	0.1918	-0.0228	-0.2098	-0.3768	-0.5287
2440.	U-U0	12192.	12198.	12225.	12260.	12296.	12335.	12375.	12417.	12461.	12507.	12556.
	H-H0	16499.	16537.	16707.	16929.	17161.	17404.	17658.	17925.	18204.	18497.	18804.
	(S-S0)/R	5.8927	3.5849	1.9518	1.2286	0.7926	0.4738	0.2191	0.0046	-0.1824	-0.3493	-0.5011
2460.	U-U0	12323.	12329.	12356.	12391.	12428.	12467.	12507.	12549.	12594.	12640.	12689.
	H-H0	16670.	16707.	16879.	17102.	17336.	17580.	17836.	18104.	18385.	18680.	18989.
	(S-S0)/R	5.9195	3.6117	1.9787	1.2556	0.8196	0.5009	0.2462	0.0317	-0.1551	-0.3219	-0.4737
2480.	U-U0	12453.	12459.	12487.	12522.	12560.	12598.	12639.	12682.	12727.	12774.	12823.
	H-H0	16840.	16878.	17051.	17276.	17511.	17757.	18015.	18284.	18567.	18864.	19175.
	(S-S0)/R	5.9462	3.6384	2.0054	1.2823	0.8465	0.5278	0.2732	0.0588	-0.1282	-0.2946	-0.4465
2500.	U-U0	12584.	12591.	12618.	12654.	12691.	12731.	12772.	12815.	12860.	12907.	12957.
	H-H0	17011.	17049.	17223.	17449.	17686.	17934.	18193.	18465.	18749.	19048.	19360.
	(S-S0)/R	5.9727	3.6649	2.0319	1.3090	0.8731	0.5545	0.3000	0.0856	-0.1012	-0.2678	-0.4194
2520.	U-U0	12716.	12722.	12750.	12786.	12824.	12863.	12905.	12948.	12993.	13041.	13091.
	H-H0	17182.	17221.	17396.	17623.	17861.	18111.	18372.	18645.	18932.	19232.	19546.
	(S-S0)/R	5.9990	3.6912	2.0583	1.3354	0.8996	0.5811	0.3266	0.1123	-0.0744	-0.2410	-0.3925
2540.	U-U0	12847.	12853.	12881.	12918.	12956.	12996.	13038.	13081.	13127.	13175.	13225.
	H-H0	17353.	17392.	17568.	17797.	18037.	18288.	18551.	18826.	19114.	19416.	19733.
	(S-S0)/R	6.0252	3.7174	2.0846	1.3617	0.9260	0.6075	0.3531	0.1389	-0.0477	-0.2144	-0.3657
2560.	U-U0	12979.	12985.	13014.	13050.	13089.	13129.	13171.	13215.	13262.	13310.	13360.
	H-H0	17525.	17564.	17741.	17972.	18213.	18466.	18730.	19007.	19297.	19601.	19919.
	(S-S0)/R	6.0512	3.7434	2.1106	1.3878	0.9522	0.6338	0.3794	0.1652	-0.0213	-0.1878	-0.3391

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREES K)		DENSITY(AMAGATS)										
		500.	550.	600.	650.	700.	750.	800.	850.	900.	950.	1000.
2060.	U-U0	10116.	10161.	10209.	10259.	10312.	10366.	10427.	10489.	10554.	10624.	10695.
	H-H0	15608.	15907.	16219.	16548.	16894.	17259.	17643.	18047.	18473.	18922.	19397.
	(S-S0)/R	-1.1995	-1.3319	-1.4566	-1.5752	-1.6886	-1.7976	-1.9031	-2.0053	-2.1050	-2.2024	-2.2986
2080.	U-U0	10244.	10290.	10338.	10388.	10443.	10499.	10558.	10621.	10686.	10756.	10829.
	H-H0	15792.	16092.	16407.	16736.	17087.	17453.	17840.	18247.	18676.	19128.	19605.
	(S-S0)/R	-1.1683	-1.3005	-1.4252	-1.5436	-1.6569	-1.7658	-1.8711	-1.9732	-2.0728	-2.1701	-2.2655
2100.	U-U0	10373.	10419.	10468.	10519.	10573.	10632.	10690.	10753.	10819.	10889.	10963.
	H-H0	15975.	16277.	16594.	16928.	17279.	17648.	18037.	18447.	18879.	19334.	19814.
	(S-S0)/R	-1.1372	-1.2694	-1.3930	-1.5123	-1.6254	-1.7342	-1.8394	-1.9414	-2.0408	-2.1380	-2.2333
2120.	U-U0	10502.	10548.	10598.	10650.	10704.	10761.	10822.	10885.	10952.	11023.	11097.
	H-H0	16159.	16462.	16782.	17118.	17471.	17843.	18235.	18647.	19082.	19540.	20024.
	(S-S0)/R	-1.1066	-1.2389	-1.3629	-1.4811	-1.5942	-1.7029	-1.8079	-1.9098	-2.0091	-2.1061	-2.2013
2140.	U-U0	10631.	10679.	10728.	10780.	10835.	10893.	10954.	11018.	11085.	11157.	11232.
	H-H0	16342.	16646.	16970.	17308.	17664.	18039.	18435.	18848.	19285.	19747.	20233.
	(S-S0)/R	-1.0758	-1.2078	-1.3321	-1.4502	-1.5632	-1.6717	-1.7760	-1.8788	-1.9776	-2.0745	-2.1695
2160.	U-U0	10761.	10809.	10859.	10911.	10967.	11025.	11086.	11151.	11219.	11291.	11366.
	H-H0	16526.	16830.	17158.	17498.	17857.	18234.	18631.	19049.	19489.	19953.	20442.
	(S-S0)/R	-1.0455	-1.1773	-1.3016	-1.4196	-1.5324	-1.6406	-1.7458	-1.8473	-1.9463	-2.0431	-2.1379
2180.	U-U0	10891.	10939.	10990.	11043.	11099.	11157.	11219.	11284.	11353.	11425.	11501.
	H-H0	16710.	17020.	17347.	17690.	18050.	18430.	18828.	19250.	19693.	20160.	20652.
	(S-S0)/R	-1.0153	-1.1471	-1.2712	-1.3891	-1.5018	-1.6102	-1.7140	-1.8164	-1.9153	-2.0119	-2.1066
2200.	U-U0	11021.	11070.	11121.	11174.	11231.	11290.	11352.	11418.	11487.	11560.	11637.
	H-H0	16894.	17207.	17535.	17881.	18244.	18626.	19028.	19451.	19897.	20368.	20862.
	(S-S0)/R	-0.9854	-1.1170	-1.2411	-1.3589	-1.4715	-1.5797	-1.6847	-1.7857	-1.8844	-1.9809	-2.0755
2220.	U-U0	11152.	11201.	11252.	11306.	11363.	11423.	11486.	11552.	11621.	11695.	11772.
	H-H0	17079.	17394.	17724.	18072.	18437.	18822.	19226.	19652.	20101.	20573.	21072.
	(S-S0)/R	-0.9554	-1.0872	-1.2111	-1.3288	-1.4413	-1.5494	-1.6539	-1.7552	-1.8538	-1.9502	-2.0446
2240.	U-U0	11283.	11332.	11384.	11438.	11496.	11556.	11619.	11686.	11756.	11830.	11908.
	H-H0	17264.	17581.	17914.	18263.	18631.	19018.	19425.	19854.	20305.	20781.	21282.
	(S-S0)/R	-0.9261	-1.0575	-1.1814	-1.2990	-1.4114	1.5194	-1.6237	-1.7249	-1.8234	-1.9197	-2.0140
2260.	U-U0	11414.	11464.	11516.	11571.	11629.	11689.	11753.	11820.	11891.	11966.	12044.
	H-H0	17449.	17768.	18103.	18455.	18825.	19215.	19624.	20056.	20510.	20988.	21492.
	(S-S0)/R	-0.8967	-1.0281	-1.1518	-1.2693	-1.3816	-1.4895	-1.5937	-1.6948	-1.7932	-1.8894	-1.9835
2280.	U-U0	11546.	11596.	11648.	11704.	11762.	11823.	11887.	11955.	12026.	12101.	12180.
	H-H0	17634.	17955.	18293.	18647.	19020.	19411.	19824.	20258.	20714.	21195.	21703.
	(S-S0)/R	-0.8676	-0.9988	-1.1225	-1.2399	-1.3521	-1.4599	-1.5640	-1.6650	-1.7632	-1.8592	-1.9533
2300.	U-U0	11677.	11728.	11781.	11837.	11895.	11957.	12022.	12090.	12162.	12237.	12317.
	H-H0	17820.	18142.	18483.	18839.	19214.	19608.	20023.	20460.	20919.	21403.	21913.
	(S-S0)/R	-0.8386	-0.9698	-1.0934	-1.2107	-1.3226	-1.4305	-1.5344	-1.6353	-1.7335	-1.8293	-1.9233
2320.	U-U0	11809.	11860.	11914.	11970.	12029.	12091.	12156.	12225.	12297.	12374.	12454.
	H-H0	18004.	18331.	18673.	19032.	19409.	19806.	20223.	20662.	21124.	21611.	22124.
	(S-S0)/R	-0.8098	-0.9409	-1.0644	-1.1816	-1.2936	-1.4012	-1.5051	-1.6058	-1.7039	-1.7998	-1.8934
2340.	U-U0	11941.	11993.	12047.	12103.	12163.	12225.	12291.	12360.	12433.	12510.	12591.
	H-H0	18192.	18519.	18863.	19224.	19604.	20003.	20423.	20864.	21329.	21819.	22335.
	(S-S0)/R	-0.7813	-0.9123	-1.0357	-1.1528	-1.2647	-1.3722	-1.4759	-1.5766	-1.6745	-1.7701	-1.8638
2360.	U-U0	12074.	12126.	12180.	12237.	12297.	12360.	12426.	12498.	12570.	12647.	12728.
	H-H0	18378.	18708.	19054.	19417.	19799.	20201.	20623.	21067.	21535.	22027.	22546.
	(S-S0)/R	-0.7529	-0.8838	-1.0071	-1.1241	-1.2359	-1.3433	-1.4470	-1.5475	-1.6453	-1.7408	-1.8344
2380.	U-U0	12207.	12259.	12314.	12371.	12432.	12495.	12562.	12632.	12706.	12784.	12866.
	H-H0	18565.	18896.	19244.	19610.	19994.	20398.	20823.	21270.	21740.	22235.	22757.
	(S-S0)/R	-0.7247	-0.8555	-0.9787	-1.0956	-1.2073	-1.3146	-1.4182	-1.5186	-1.6163	-1.7117	-1.8051
2400.	U-U0	12340.	12392.	12448.	12505.	12566.	12630.	12698.	12768.	12843.	12921.	13004.
	H-H0	18751.	19085.	19435.	19803.	20190.	20596.	21024.	21473.	21946.	22444.	22968.
	(S-S0)/R	-0.6966	-0.8274	-0.9505	-1.0674	-1.1789	-1.2861	-1.3896	-1.4899	-1.5875	-1.6828	-1.7761
2420.	U-U0	12473.	12526.	12582.	12640.	12701.	12766.	12834.	12905.	12980.	13059.	13142.
	H-H0	18938.	19274.	19627.	19997.	20386.	20796.	21226.	21678.	22152.	22653.	23180.
	(S-S0)/R	-0.6688	-0.7995	-0.9225	-1.0392	-1.1507	-1.2578	-1.3612	-1.4614	-1.5589	-1.6541	-1.7473
2440.	U-U0	12607.	12660.	12716.	12775.	12837.	12902.	12970.	13042.	13117.	13197.	13280.
	H-H0	19125.	19463.	19818.	20190.	20582.	20993.	21425.	21880.	22358.	22861.	23392.
	(S-S0)/R	-0.6411	-0.7717	-0.8947	-1.0113	-1.1227	-1.2297	-1.3330	-1.4331	-1.5305	-1.6255	-1.7186
2460.	U-U0	12741.	12794.	12851.	12910.	12972.	13038.	13106.	13179.	13255.	13335.	13418.
	H-H0	19313.	19653.	20010.	20384.	20778.	21191.	21626.	22083.	22564.	23070.	23603.
	(S-S0)/R	-0.6136	-0.7441	-0.8670	-0.9836	-1.0949	-1.2018	-1.3049	-1.4049	-1.5022	-1.5972	-1.6901
2480.	U-U0	12875.	12929.	12986.	13045.	13108.	13174.	13243.	13316.	13392.	13473.	13556.
	H-H0	19501.	19843.	20201.	20578.	20974.	21390.	21827.	22287.	22771.	23279.	23815.
	(S-S0)/R	-0.5863	-0.7167	-0.8395	-0.9560	-1.0672	-1.1740	-1.2771	-1.3770	-1.4741	-1.5690	-1.6618
2500.	U-U0	13009.	13063.	13121.	13181.	13244.	13310.	13380.	13453.	13530.	13611.	13697.
	H-H0	19688.	20032.	20394.	20773.	21171.	21589.	22029.	22491.	22977.	23488.	24027.
	(S-S0)/R	-0.5592	-0.6895	-0.8122	-0.9286	-1.0397	-1.1464	-1.2494	-1.3492	-1.4462	-1.5410	-1.6337
2520.	U-U0	13143.	13198.	13256.	13317.	13380.	13447.	13517.	13591.	13668.	13750.	13836.
	H-H0	19876.	20223.	20586.	20967.	21367.	21788.	22230.	22695.	23184.	23698.	24240.
	(S-S0)/R	-0.5322	-0.6624	-0.7850	-0.9013	-1.0124	-1.1190	-1.2219	-1.3216	-1.4185	-1.5132	-1.6058
2540.	U-U0	13278.	13334.	13392.	13453.	13517.	13584.	13654.	13729.	13807.	13889.	13976.
	H-H0	20065.	20413.	20778.	21162.	21564.	21987.	22432.	22899.	23391.	23908.	24452.
	(S-S0)/R	-0.5053	-0.6355	-0.7581	-0.8743	-0.9852	-1.0918	-1.1945	-1.2941	-1.3910	-1.4855	-1.5780
2560.	U-U0	13413.	13469.	13527.	13589.	13653.	13721.	13792.	13867.	13946.	14028.	14115.
	H-H0	20253.	20603.	20971.	21357.	21761.	22187.	22634.	23104.	23598.	24117.	24664.
	(S-S0)/R	-0.4787	-0.6088	-0.7312	-0.8474	-0.9582	-1.0647	-1.1674	-1.2669	-1.3636	-1.4580	-1.5504

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREES K)		DENSITY(AMAGAT)										
		1050.	1100.	1150.	1200.	1250.	1300.	1350.	1400.	1450.	1500.	1550
2060.	U-U0	10772.	10853.	10938.	11029.	11125.	11226.	11333.	11447.	11567.	11695.	11830
	H-H0	19897.	20426.	20984.	21575.	22199.	22860.	23558.	24302.	25088.	25935.	26807
	(S-S0)/R	-2.3920	-2.4846	-2.5761	-2.6662	-2.7564	-2.8456	-2.9346	-3.0231	-3.1114	-3.1996	-3.2878
2080.	U-U0	10906.	10988.	11074.	11165.	11262.	11364.	11472.	11586.	11707.	11836.	11972.
	H-H0	20108.	20641.	21201.	21797.	22425.	23093.	23794.	24540.	25330.	26180.	27058.
	(S-S0)/R	-2.3593	-2.4518	-2.5432	-2.6336	-2.7232	-2.8123	-2.9009	-2.9892	-3.0773	-3.1651	-3.2532
2100.	U-U0	11041.	11123.	11210.	11302.	11399.	11502.	11611.	11726.	11848.	11977.	12115
	H-H0	20321.	20856.	21422.	22019.	22651.	23326.	24026.	24777.	25572	26424.	27308
	(S-S0)/R	-2.3269	-2.4193	-2.5104	-2.6007	-2.6902	-2.7791	-2.8675	-2.9556	-3.0434	-3.1312	-3.2189
2120.	U-U0	11176.	11259.	11346.	11439.	11537.	11640.	11748.	11866.	11989	12119.	12257
	H-H0	20534.	21072.	21641.	22242.	22877.	23550.	24261.	25015.	25814.	26660.	27556.
	(S-S0)/R	-2.2948	-2.3869	-2.4780	-2.5680	-2.6574	-2.7461	-2.8345	-2.9222	-3.0098	-3.0974	-3.1849
2140.	U-U0	11311.	11394.	11483.	11576.	11674.	11779.	11888.	12006.	12130.	12261.	12400.
	H-H0	20746.	21288.	21860.	22464.	23103.	23779.	24495.	25253.	26055.	26905.	27806.
	(S-S0)/R	-2.2629	-2.3547	-2.4457	-2.5356	-2.6248	-2.7133	-2.8014	-2.8890	-2.9765	-3.0638	-3.1511
2160.	U-U0	11446.	11530.	11619.	11713.	11812.	11917.	12029.	12146.	12271.	12403.	12543.
	H-H0	20959.	21503.	22079.	22687.	23330.	24009.	24729.	25490.	26297.	27154.	28060
	(S-S0)/R	-2.2312	-2.3230	-2.4137	-2.5035	-2.5924	-2.6808	-2.7687	-2.8562	-2.9434	-3.0305	-3.1176
2180.	U-U0	11582.	11667.	11756.	11851.	11951.	12057.	12168.	12287.	12413.	12546.	12687.
	H-H0	21171.	21719.	22298.	22910.	23556.	24239.	24962.	25728.	26539.	27399.	28320
	(S-S0)/R	-2.1997	-2.2914	-2.3820	-2.4715	-2.5603	-2.6485	-2.7362	-2.8235	-2.9106	-2.9975	-3.0844
2200.	U-U0	11718.	11803.	11893.	11989.	12089.	12196.	12308.	12428.	12554.	12688.	12832.
	H-H0	21384.	21936.	22518.	23132.	23782.	24469.	25196.	25966.	26781.	27647.	28561.
	(S-S0)/R	-2.1685	-2.2600	-2.3504	-2.4398	-2.5285	-2.6165	-2.7040	-2.7911	-2.8780	-2.9647	-3.0514
2220.	U-U0	11854.	11940.	12031.	12127.	12228.	12336.	12448.	12569.	12696.	12831.	12974
	H-H0	21597.	22152.	22737.	23355.	24009.	24700.	25430.	26204.	27023.	27891.	28811.
	(S-S0)/R	-2.1374	-2.2289	-2.3191	-2.4084	-2.4969	-2.5847	-2.6720	-2.7589	-2.8456	-2.9321	-3.0186
2240.	U-U0	11990.	12077.	12169.	12265.	12367.	12475.	12590.	12711.	12839.	12974.	13118.
	H-H0	21810.	22368.	22957.	23578.	24235.	24930.	25666.	26442.	27265.	28137.	29062.
	(S-S0)/R	-2.1066	-2.1979	-2.2880	-2.3771	-2.4654	-2.5531	-2.6403	-2.7270	-2.8135	-2.8998	-2.9861
2260.	U-U0	12127.	12214.	12307.	12404.	12507.	12616.	12731.	12852.	12981.	13118.	13262.
	H-H0	22024.	22585.	23177.	23802.	24462.	25160.	25898.	26682.	27507.	28383.	29312
	(S-S0)/R	-2.0761	-2.1672	-2.2571	-2.3461	-2.4343	-2.5218	-2.6087	-2.6953	-2.7816	-2.8677	-2.9536
2280.	U-U0	12264.	12352.	12445.	12543.	12646.	12756.	12872.	12994.	13124.	13262.	13407
	H-H0	22237.	22801.	23396.	24025.	24689.	25390.	26132.	26920.	27749.	28629.	29562.
	(S-S0)/R	-2.0457	-2.1367	-2.2265	-2.3153	-2.4033	-2.4906	-2.5774	-2.6638	-2.7500	-2.8359	-2.9217
2300.	U-U0	12401.	12490.	12583.	12682.	12786.	12897.	13013.	13136.	13267.	13406.	13552.
	H-H0	22451.	23018.	23616.	24248.	24916.	25621.	26367.	27156.	27991.	28875.	29813.
	(S-S0)/R	-2.0155	-2.1064	-2.1960	-2.2847	-2.3725	-2.4597	-2.5464	-2.6326	-2.7185	-2.8043	-2.8899
2320.	U-U0	12539.	12628.	12722.	12821.	12926.	13037.	13155.	13279.	13410.	13550.	13697
	H-H0	22665.	23235.	23837.	24472.	25142.	25851.	26601.	27394.	28233.	29121.	30063.
	(S-S0)/R	-1.9856	-2.0763	-2.1658	-2.2541	-2.3420	-2.4290	-2.5155	-2.6016	-2.6873	-2.7728	-2.8583
2340.	U-U0	12676.	12766.	12861.	12961.	13067.	13178.	13297.	13421.	13554.	13694.	13842.
	H-H0	22879.	23452.	24057.	24695.	25369.	26082.	26835.	27632.	28475.	29367.	30313.
	(S-S0)/R	-1.9558	-2.0464	-2.1358	-2.2241	-2.3117	-2.3985	-2.4849	-2.5707	-2.6563	-2.7417	-2.8270
2360.	U-U0	12814.	12905.	13000.	13101.	13207.	13320.	13439.	13564.	13697.	13838.	13987.
	H-H0	23093.	23669.	24277.	24919.	25597.	26313.	27069.	27870.	28717.	29613.	30563.
	(S-S0)/R	-1.9263	-2.0167	-2.1059	-2.1942	-2.2816	-2.3683	-2.4544	-2.5401	-2.6256	-2.7108	-2.7958
2380.	U-U0	12952.	13044.	13140.	13241.	13348.	13461.	13581.	13707.	13841.	13984.	14133.
	H-H0	23307.	23886.	24498.	25143.	25824.	26543.	27304.	28108.	28959.	29859.	30814.
	(S-S0)/R	-1.8969	-1.9872	-2.0763	-2.1644	-2.2517	-2.3382	-2.4242	-2.5098	-2.5950	-2.6800	-2.7649
2400.	U-U0	13091.	13183.	13279.	13381.	13489.	13603.	13723.	13851.	13985.	14128.	14278.
	H-H0	23521.	24104.	24718.	25367.	26051.	26774.	27538.	28346.	29201.	30106.	31064.
	(S-S0)/R	-1.8677	-1.9579	-2.0469	-2.1348	-2.2219	-2.3083	-2.3942	-2.4796	-2.5646	-2.6495	-2.7342
2420.	U-U0	13230.	13322.	13419.	13522.	13631.	13745.	13866.	13994.	14130.	14273.	14425
	H-H0	23735.	24321.	24938.	25590.	26278.	27005.	27773.	28584.	29443.	30352.	31314
	(S-S0)/R	-1.8388	-1.9288	-2.0177	-2.1055	-2.1924	-2.2787	-2.3644	-2.4496	-2.5345	-2.6192	-2.7037
2440.	U-U0	13369.	13461.	13559.	13663.	13772.	13887.	14009.	14138.	14274.	14418.	14571
	H-H0	23950.	24539.	25160.	25815.	26506.	27236.	28007.	28823.	29685	30598.	31564
	(S-S0)/R	-1.8100	-1.8998	-1.9886	-2.0763	-2.1631	-2.2492	-2.3347	-2.4198	-2.5046	-2.5891	-2.6734
2460.	U-U0	13508.	13601.	13700.	13804.	13914.	14030.	14152.	14282.	14419	14564.	14717
	H-H0	24165.	24757.	25381.	26039	26733.	27467.	28242.	29061.	29927	30844.	31814
	(S-S0)/R	-1.7814	-1.8712	-1.9598	-2.0473	-2.1340	-2.2199	-2.3052	-2.3902	-2.4748	-2.5592	-2.6435
2480.	U-U0	13647.	13741.	13841.	13945.	14056.	14172.	14296.	14428.	14564	14710.	14864
	H-H0	24380.	24974.	25602.	26263.	26961.	27698.	28476.	29299.	30169	31090.	32064
	(S-S0)/R	-1.7530	-1.8427	-1.9311	-2.0185	-2.1050	-2.1908	-2.2761	-2.3608	-2.4453	-2.5294	-2.6135
2500.	U-U0	13787.	13881.	13981.	14087	14198.	14315.	14439.	14575.	14709	14855.	15011
	H-H0	24595.	25192.	25823.	26487	27189.	27929.	28711.	29538	30413	31340.	32314
	(S-S0)/R	-1.7247	-1.8143	-1.9026	-1.9899	-2.0763	-2.1620	-2.2471	-2.3317	-2.4159	-2.4999	-2.5838
2520.	U-U0	13927.	14022.	14122.	14228.	14340.	14458.	14583	14715.	14854	15002.	15158
	H-H0	24810.	25411.	26044.	26712	27416.	28160.	28946.	29776.	30654	31592	32565
	(S-S0)/R	-1.6967	-1.7861	-1.8743	-1.9615	-2.0477	-2.1333	-2.2184	-2.3027	-2.3868	-2.4706	-2.5543
2540	U-U0	14067.	14163.	14264.	14370	14483.	14602.	14727	14860.	15000	15148	15305
	H-H0	25025	25629.	26265.	26936	27644.	28391.	29181	30014	30898	31838	32815
	(S-S0)/R	-1.6688	-1.7581	-1.8462	-1.9332	-2.0194	-2.1048	-2.1895	-2.2738	-2.3578	-2.4413	-2.5250
2560.	U-U0	14207.	14304.	14405.	14513	14626	14745.	14871	15005	15148	15298	15452
	H-H0	25240	25847.	26487	27161	27872.	28623.	29415	30253	31138	32084	33065
	(S-S0)/R	-1.6411	-1.7301	-1.8183	-1.9052	-1.9912	-2.0764	-2.1612	-2.2452	-2.3290	-2.4126	-2.4959

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT)								
		1600.	1650.	1700.	1750.	1800.	1850.	1900.	1950.	2000.
2060.	U-U0	11974.	12127.	12290.	12463.	12647.	12844.	13054.	13277.	13516.
	H-H0	27747.	28746.	29800.	30940.	32144.	33426.	34797.	36258.	37819.
	(S-S0)/R	-3.3761	-3.4649	-3.5532	-3.6422	-3.7315	-3.8212	-3.9114	-4.0021	-4.0932
2080.	U-U0	12117.	12271.	12435.	12609.	12795.	12993.	13204.	13428.	13669.
	H-H0	28002.	29004.	30074.	31216.	32419.	33708.	35083.	36552.	38117.
	(S-S0)/R	-3.3413	-3.4299	-3.5179	-3.6068	-3.6956	-3.7851	-3.8749	-3.9653	-4.0561
2100.	U-U0	12261.	12416.	12581.	12756.	12943.	13142.	13354.	13580.	13822.
	H-H0	28258.	29264.	30339.	31486.	32694.	33989.	35369.	36841.	38414.
	(S-S0)/R	-3.3067	-3.3947	-3.4828	-3.5713	-3.6601	-3.7492	-3.8388	-3.9288	-4.0193
2120.	U-U0	12404.	12560.	12726.	12903.	13090.	13291.	13504.	13732.	13975.
	H-H0	28513.	29526.	30603.	31749.	32969.	34269.	35654.	37132.	38711.
	(S-S0)/R	-3.2725	-3.3602	-3.4481	-3.5363	-3.6248	-3.7136	-3.8029	-3.8927	-3.9829
2140.	U-U0	12548.	12705.	12872.	13050.	13239.	13440.	13654.	13883.	14128.
	H-H0	28768.	29786.	30868.	32019.	33244.	34548.	35940.	37423.	39007.
	(S-S0)/R	-3.2385	-3.3259	-3.4136	-3.5015	-3.5898	-3.6784	-3.7674	-3.8568	-3.9467
2160.	U-U0	12692.	12850.	13018.	13197.	13387.	13589.	13805.	14035.	14281.
	H-H0	29023.	30046.	31133.	32289.	33519.	34829.	36225.	37714.	39303.
	(S-S0)/R	-3.2047	-3.2920	-3.3794	-3.4671	-3.5550	-3.6434	-3.7321	-3.8212	-3.9108
2180.	U-U0	12837.	12994.	13165.	13344.	13535.	13739.	13956.	14187.	14434.
	H-H0	29278.	30305.	31397.	32558.	33793.	35108.	36510.	38004.	39599.
	(S-S0)/R	-3.1713	-3.2583	-3.3454	-3.4329	-3.5206	-3.6086	-3.6971	-3.7859	-3.8752
2200.	U-U0	12981.	13141.	13311.	13492.	13684.	13889.	14107.	14340.	14588.
	H-H0	29533.	30565.	31661.	32827.	34067.	35388.	36794.	38294.	39895.
	(S-S0)/R	-3.1380	-3.2248	-3.3118	-3.3989	-3.4864	-3.5742	-3.6624	-3.7509	-3.8399
2220.	U-U0	13126.	13287.	13458.	13640.	13833.	14039.	14258.	14492.	14741.
	H-H0	29788.	30824.	31925.	33096.	34341.	35667.	37079.	38584.	40190.
	(S-S0)/R	-3.1051	-3.1916	-3.2783	-3.3653	-3.4525	3.5400	-3.6279	-3.7162	-3.8049
2240.	U-U0	13271.	13433.	13605.	13788.	13982.	14189.	14410.	14645.	14895.
	H-H0	30043.	31084.	32190.	33365.	34615.	35946.	37363.	38874.	40485.
	(S-S0)/R	-3.0723	-3.1587	-3.2451	-3.3319	-3.4188	-3.5061	-3.5937	-3.6818	-3.7702
2260.	U-U0	13416.	13579.	13752.	13936.	14131.	14340.	14561.	14797.	15049.
	H-H0	30297.	31343.	32454.	33634.	34889.	36225.	37647.	39163.	40780.
	(S-S0)/R	-3.0400	-3.1260	-3.2122	-3.2987	-3.3854	-3.4724	-3.5598	-3.6476	-3.7357
2280.	U-U0	13561.	13725.	13899.	14084.	14281.	14490.	14713.	14950.	15203.
	H-H0	30552.	31602.	32717.	33902.	35162.	36503.	37931.	39452.	41074.
	(S-S0)/R	-3.0078	-3.0935	-3.1795	-3.2658	-3.3523	-3.4390	-3.5262	-3.6137	-3.7015
2300.	U-U0	13707.	13872.	14047.	14233.	14431.	14641.	14865.	15103.	15358.
	H-H0	30807.	31861.	32981.	34171.	35436.	36782.	38214.	39741.	41368.
	(S-S0)/R	-2.9756	-3.0613	-3.1471	-3.2331	-3.3194	-3.4059	-3.4928	-3.5800	-3.6676
2320.	U-U0	13853.	14018.	14195.	14382.	14581.	14792.	15017.	15257.	15512.
	H-H0	31061.	32120.	33245.	34439.	35709.	37060.	38498.	40029.	41662.
	(S-S0)/R	-2.9438	-3.0293	-3.1149	-3.2007	-3.2867	-3.3730	-3.4596	-3.5466	-3.6339
2340.	U-U0	13999.	14164.	14343.	14531.	14731.	14943.	15169.	15410.	15667.
	H-H0	31316.	32379.	33508.	34708.	35982.	37338.	38781.	40317.	41955.
	(S-S0)/R	-2.9122	-2.9975	-3.0829	-3.1685	-3.2543	-3.3403	-3.4267	-3.5134	-3.6005
2360.	U-U0	14145.	14313.	14491.	14680.	14881.	15094.	15322.	15564.	15822.
	H-H0	31570.	32638.	33772.	34976.	36255.	37616.	39064.	40605.	42249.
	(S-S0)/R	-2.8809	-2.9660	-3.0512	-3.1365	-3.2221	-3.3079	-3.3941	-3.4805	-3.5673
2380.	U-U0	14292.	14460.	14638.	14829.	15031.	15246.	15474.	15718.	15977.
	H-H0	31825.	32897.	34035.	35244.	36528.	37893.	39346.	40893.	42542.
	(S-S0)/R	-2.8498	-2.9347	-3.0196	-3.1048	-3.1901	-3.2757	-3.3616	-3.4478	-3.5344
2400.	U-U0	14438.	14606.	14786.	14978.	15182.	15398.	15627.	15872.	16132.
	H-H0	32079.	33156.	34299.	35512.	36801.	38171.	39628.	41181.	42835.
	(S-S0)/R	-2.8189	-2.9036	-2.9883	-3.0733	-3.1584	-3.2436	-3.3294	-3.4154	-3.5017
2420.	U-U0	14585.	14754.	14937.	15128.	15333.	15549.	15780.	16026.	16287.
	H-H0	32334.	33415.	34562.	35780.	37073.	38448.	39911.	41468.	43127.
	(S-S0)/R	-2.7882	-2.8727	-2.9573	-3.0420	-3.1269	-3.2121	-3.2975	-3.3832	-3.4693
2440.	U-U0	14732.	14904.	15084.	15278.	15484.	15702.	15933.	16180.	16443.
	H-H0	32588.	33674.	34825.	36047.	37346.	38726.	40193.	41759.	43419.
	(S-S0)/R	-2.7577	-2.8420	-2.9264	-3.0109	-3.0956	-3.1806	-3.2658	-3.3513	-3.4371
2460.	U-U0	14880.	15052.	15235.	15429.	15635.	15854.	16087.	16334.	16598.
	H-H0	32842.	33932.	35088.	36315.	37618.	39003.	40475.	42042.	43711.
	(S-S0)/R	-2.7275	-2.8116	-2.8958	-2.9801	-3.0640	-3.1493	-3.2343	-3.3195	-3.4051
2480.	U-U0	15027.	15200.	15384.	15578.	15786.	16006.	16240.	16489.	16754.
	H-H0	33097.	34191.	35351.	36583.	37890.	39280.	40757.	42329.	44003.
	(S-S0)/R	-2.6974	-2.7813	-2.8653	-2.9494	-3.0337	-3.1182	-3.2030	-3.2880	-3.3734
2500.	U-U0	15175.	15349.	15534.	15730.	15938.	16159.	16394.	16644.	16910.
	H-H0	33351.	34449.	35614.	36850.	38162.	39556.	41039.	42616.	44295.
	(S-S0)/R	-2.6675	-2.7513	-2.8351	-2.9190	-3.0031	-3.0874	-3.1719	-3.2568	-3.3419
2520.	U-U0	15323.	15498.	15683.	15880.	16089.	16311.	16547.	16799.	17066.
	H-H0	33605.	34708.	35877.	37117.	38434.	39833.	41320.	42902.	44588.
	(S-S0)/R	-2.6379	-2.7214	-2.8051	-2.8888	-2.9727	-3.0568	-3.1411	-3.2257	-3.3106
2540.	U-U0	15471.	15647.	15833.	16031.	16241.	16464.	16701.	16954.	17222.
	H-H0	33859.	34966.	36140.	37385.	38706.	40110.	41601.	43188.	44877.
	(S-S0)/R	-2.6084	-2.6918	-2.7752	-2.8588	-2.9425	-3.0263	-3.1105	-3.1948	-3.2795
2560.	U-U0	15619.	15796.	15983.	16182.	16393.	16617.	16855.	17109.	17378.
	H-H0	34113.	35225.	36402.	37652.	38978.	40386.	41883.	43474.	45168.
	(S-S0)/R	-2.5791	-2.6624	-2.7456	-2.8290	-2.9124	-2.9961	-3.0801	-3.1642	-3.2487

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT) 1.	10.	50.	100.	150.	200.	250.	300.	350.	400.	450.
2580.	U-U0	13131.	13137.	13146.	13183.	13222.	13262.	13304.	13349.	13395.	13444.	13495.
	H-H0	17497.	17734.	17916.	18147.	18390.	18644.	18910.	19188.	19480.	19786.	20106.
	(S-S0)/R	6.0771	3.7693	2.3465	1.4138	0.9782	0.6599	0.4055	0.1914	0.0058	-0.1615	-0.3127
2600.	U-U0	13243.	13250.	13270.	13314	13355	13395.	13438	13483.	13530.	13579.	13630
	H-H0	17888.	17958.	18206.	18322.	18566.	18822.	19089.	19370.	19665.	19973.	20293.
	(S-S0)/R	6.1020	3.7953	2.1623	1.4396	1.0041	0.6850	0.4315	0.2179	0.0321	-0.1353	-0.2865
2620.	U-U0	13374.	13382.	13411.	13449	13488.	13529.	13572.	13617.	13664.	13714.	13766
	H-H0	18041.	18081.	18262.	18497	18749.	19000.	19269.	19551.	19847.	20156.	20480
	(S-S0)/R	6.1280	3.8206	2.1878	1.4651	1.0288	0.7116	0.4574	0.2434	0.0577	-0.1102	-0.2604
2640.	U-U0	13509.	13515.	13544.	13582.	13622.	13663.	13706.	13752.	13799.	13849.	13901.
	H-H0	18218.	18254.	18435.	18672.	18920.	19179.	19449.	19733.	20030.	20341.	20667.
	(S-S0)/R	6.1536	3.8462	2.2134	1.4908	1.0554	0.7372	0.4836	0.2692	0.0829	-0.0853	-0.2344
2660.	U-U0	13642.	13648.	13677.	13716.	13755.	13797.	13841.	13886.	13934.	13984.	14037.
	H-H0	18386.	18427.	18610.	18848.	19097.	19357.	19630.	19915.	20214.	20527.	20855.
	(S-S0)/R	6.1789	3.8715	2.2387	1.5162	1.0808	0.7627	0.5086	0.2948	0.1086	-0.0576	-0.2084
2680.	U-U0	13775.	13781.	13811.	13849.	13888.	13931.	13975.	14021.	14070.	14120.	14173.
	H-H0	18559.	18600.	18784.	19024.	19274.	19536.	19810.	20098.	20398.	20713.	21043.
	(S-S0)/R	6.2042	3.8968	2.2639	1.5414	1.1061	0.7880	0.5340	0.3202	0.1341	-0.0320	-0.1829
2700.	U-U0	13908.	13915.	13945.	13983.	14024.	14066.	14110.	14157.	14205.	14256.	14309.
	H-H0	18732.	18773.	18959.	19200.	19452.	19715.	19991.	20280.	20582.	20899.	21231.
	(S-S0)/R	6.2291	3.9214	2.2889	1.5665	1.1312	0.8132	0.5592	0.3455	0.1594	-0.0066	-0.1574
2720.	U-U0	14042.	14049.	14079.	14118.	14158.	14201.	14245.	14292.	14341.	14392.	14446.
	H-H0	18906.	18947.	19133.	19376.	19630.	19895.	20172.	20463.	20767.	21085.	21419.
	(S-S0)/R	6.2540	3.9462	2.3138	1.5914	1.1562	0.8382	0.5843	0.3707	0.1847	0.0187	-0.1321
2740.	U-U0	14176.	14183.	14213.	14252.	14293.	14336.	14381.	14428.	14477.	14528.	14582.
	H-H0	19080.	19121.	19308.	19552.	19808.	20074.	20354.	20646.	20951.	21272.	21607.
	(S-S0)/R	6.2787	3.9709	2.3385	1.6162	1.1810	0.8631	0.6093	0.3957	0.2097	0.0438	-0.1069
2760.	U-U0	14310.	14317.	14347.	14387.	14428.	14471.	14516.	14564.	14613.	14665.	14719.
	H-H0	19253.	19295.	19484.	19729.	19986.	20254.	20535.	20829.	21136.	21458.	21796.
	(S-S0)/R	6.3032	3.9955	2.3631	1.6408	1.2057	0.8879	0.6341	0.4206	0.2347	0.0688	-0.0818
2780.	U-U0	14444.	14451.	14482.	14521.	14563.	14607.	14652.	14700.	14750.	14802.	14856.
	H-H0	19428.	19468.	19659.	19906.	20164.	20434.	20717.	21012.	21321.	21645.	21984.
	(S-S0)/R	6.3276	4.0199	2.3876	1.6653	1.2303	0.9125	0.6588	0.4453	0.2595	0.0937	-0.0569
2800.	U-U0	14579.	14586.	14617.	14657.	14698.	14742.	14788.	14836.	14886.	14939.	14994.
	H-H0	19602.	19644.	19835.	20083.	20343.	20614.	20898.	21196.	21507.	21832.	22173.
	(S-S0)/R	6.3519	4.0442	2.4119	1.6897	1.2547	0.9370	0.6833	0.4699	0.2841	0.1184	-0.0321
2820.	U-U0	14714.	14721.	14752.	14793.	14834.	14878.	14924.	14973.	15023.	15076.	15131.
	H-H0	19776.	19819.	20011.	20261.	20522.	20795.	21080.	21379.	21692.	22020.	22362.
	(S-S0)/R	6.3760	4.0684	2.4361	1.7140	1.2790	0.9613	0.7077	0.4944	0.3086	0.1430	-0.0075
2840.	U-U0	14849.	14856.	14887.	14927.	14970.	15014.	15061.	15109.	15160.	15213.	15269.
	H-H0	19951.	19994.	20187.	20438.	20701.	20975.	21263.	21563.	21878.	22207.	22552.
	(S-S0)/R	6.4001	4.0924	2.4601	1.7381	1.3032	0.9856	0.7321	0.5187	0.3330	0.1674	0.0170
2860.	U-U0	14984.	14991.	15022.	15063.	15106.	15151.	15197.	15246.	15297.	15351.	15407.
	H-H0	20126.	20169.	20364.	20616.	20880.	21156.	21445.	21747.	22064.	22394.	22741.
	(S-S0)/R	6.4239	4.1163	2.4841	1.7620	1.3272	1.0096	0.7561	0.5429	0.3573	0.1917	0.0414
2880.	U-U0	15119.	15126.	15158.	15199.	15242.	15287.	15334.	15383.	15435.	15489.	15545.
	H-H0	20301.	20344.	20540.	20794.	21060.	21337.	21628.	21932.	22250.	22582.	22931.
	(S-S0)/R	6.4477	4.1400	2.5078	1.7859	1.3511	1.0336	0.7801	0.5668	0.3814	0.2159	0.0656
2900.	U-U0	15255.	15262.	15294.	15335.	15378.	15424.	15471.	15521.	15573.	15627.	15684.
	H-H0	20476.	20520.	20716.	20972.	21239.	21519.	21811.	22116.	22436.	22770.	23120.
	(S-S0)/R	6.4713	4.1637	2.5315	1.8096	1.3748	1.0574	0.8040	0.5908	0.4054	0.2400	0.0897
2920.	U-U0	15391.	15398.	15430.	15472.	15515.	15561.	15608.	15658.	15710.	15765.	15822.
	H-H0	20652.	20696.	20893.	21150.	21419.	21700.	21994.	22301.	22622.	22958.	23310.
	(S-S0)/R	6.4948	4.1872	2.5551	1.8332	1.3985	1.0811	0.8277	0.6146	0.4292	0.2639	0.1137
2940.	U-U0	15527.	15534	15566.	15608.	15652.	15698.	15746.	15796.	15849.	15904.	15961.
	H-H0	20828.	20872.	21070.	21329.	21599.	21882.	22177.	22486.	22809	23147.	23501.
	(S-S0)/R	6.5182	4.2105	2.5785	1.8566	1.4220	1.1046	0.8513	0.6383	0.4529	0.2877	0.1376
2960.	U-U0	15663.	15670.	15703.	15745.	15789.	15835.	15883.	15934.	15987.	16042.	16100
	H-H0	21004.	21048.	21248.	21508.	21779.	22063.	22360.	22671.	22995.	23335.	23691
	(S-S0)/R	6.5414	4.2338	2.6018	1.8800	1.4454	1.1281	0.8748	0.6619	0.4765	0.3113	0.1613
2980.	U-U0	15799.	15806.	15838.	15882	15926.	15973.	16021.	16072.	16125.	16181.	16239
	H-H0	21180	21224.	21425.	21687.	21960.	22245.	22544.	22856.	23182.	23524.	23881.
	(S-S0)/R	6.5645	4.2569	2.6249	1.9032	1.4686	1.1514	0.8982	0.6853	0.5000	0.3348	0.1849
3000.	U-U0	15936.	15943.	15976.	16019.	16064.	16110.	16159.	16210.	16264.	16320.	16378.
	H-H0	21356	21401.	21603.	21866.	22141.	22426.	22728	23041	23368.	23712.	24072.
	(S-S0)/R	6.5875	4.2799	2.6480	1.9263	1.4918	1.1748	0.9214	0.7086	0.5234	0.3582	0.2083

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT) 500.	550.	600.	650.	700.	750.	800.	850.	900.	950.	1000.
2580.	U-U0	13549.	13605.	13664.	13725.	13790.	13854.	13930.	14005.	14084.	14168.	14255.
	H-H0	20442.	20784.	21164.	21552.	21959.	22386.	22850.	23308.	23805.	24322.	24877.
	(S-S0)/R	-0.4522	-0.5822	-0.7046	-0.8206	-0.9314	-1.0378	-1.1404	-1.2399	-1.3364	-1.4307	-1.5230
2600.	U-U0	13684.	13741.	13800.	13862.	13927.	13996.	14068.	14144.	14223.	14307.	14395.
	H-H0	20631.	20985.	21357.	21747.	22156.	22586.	23058.	23513.	24012.	24537.	25090.
	(S-S0)/R	-0.4258	-0.5558	-0.6781	-0.7941	-0.9048	-1.0110	-1.1135	-1.2128	-1.3094	-1.4036	-1.4958
2620.	U-U0	13820.	13877.	13936.	13999.	14065.	14134.	14206.	14283.	14363.	14447.	14536.
	H-H0	20820.	21176.	21550.	21942.	22354.	22786.	23260.	23718.	24218.	24747.	25303.
	(S-S0)/R	-0.3997	-0.5295	-0.6518	-0.7676	-0.8783	-0.9844	-1.0868	-1.1860	-1.2825	-1.3766	-1.4687
2640.	U-U0	13956.	14013.	14073.	14136.	14202.	14272.	14345.	14422.	14502.	14587.	14676.
	H-H0	21009.	21367.	21743.	22138.	22552.	22986.	23443.	23923.	24427.	24958.	25516.
	(S-S0)/R	-0.3736	-0.5034	-0.6256	-0.7414	-0.8519	-0.9580	-1.0603	-1.1594	-1.2558	-1.3498	-1.4418
2660.	U-U0	14092.	14150.	14210.	14274.	14340.	14410.	14484.	14562.	14642.	14727.	14817.
	H-H0	21199.	21559.	21937.	22333.	22750.	23187.	23646.	24128.	24635.	25168.	25729.
	(S-S0)/R	-0.3478	-0.4775	-0.5996	-0.7153	-0.8257	-0.9317	-1.0340	-1.1330	-1.2292	-1.3231	-1.4150
2680.	U-U0	14228.	14286.	14347.	14411.	14478.	14549.	14623.	14700.	14782	14864.	14953.
	H-H0	21388.	21751.	22131.	22529.	22946.	23387.	23848.	24333.	24843.	25378.	25942.
	(S-S0)/R	-0.3220	-0.4517	-0.5737	-0.6893	-0.7997	-0.9056	-1.0078	-1.1067	-1.2029	-1.2967	-1.3884
2700.	U-U0	14365.	14423.	14485.	14549.	14617.	14687.	14762.	14840.	14922.	15009.	15100.
	H-H0	21578.	21943.	22325.	22725.	23146.	23588.	24051.	24539.	25051.	25589.	26155.
	(S-S0)/R	-0.2965	-0.4261	-0.5480	-0.6635	-0.7739	-0.8797	-0.9817	-1.0805	-1.1766	-1.2703	-1.3620
2720.	U-U0	14502.	14561.	14622.	14687.	14755.	14826.	14901.	14980.	15063.	15150.	15241.
	H-H0	21768.	22135.	22519.	22922.	23345.	23789.	24255.	24744.	25259.	25800.	26369.
	(S-S0)/R	-0.2711	-0.4006	-0.5224	-0.6379	-0.7481	-0.8538	-0.9556	-1.0546	-1.1505	-1.2441	-1.3357
2740.	U-U0	14639.	14698.	14760.	14825.	14894.	14966.	15041.	15120.	15203.	15291.	15383.
	H-H0	21959.	22327	22713.	23116.	23543.	23989.	24458.	24950.	25467.	26011.	26583.
	(S-S0)/R	-0.2458	-0.3752	-0.4970	-0.6124	-0.7225	-0.8282	-0.9301	-1.0287	-1.1246	-1.2181	-1.3096
2760.	U-U0	14776.	14836.	14898.	14964.	15033.	15105.	15181.	15260.	15344.	15432.	15525.
	H-H0	22149.	22519.	22908.	23315.	23742.	24191.	24661.	25156.	25676.	26222.	26796.
	(S-S0)/R	-0.2206	-0.3500	-0.4717	-0.5870	-0.6971	-0.8027	-0.9045	-1.0030	-1.0988	-1.1923	-1.2836
2780.	U-U0	14914.	14974.	15037.	15103.	15172.	15245.	15321.	15401.	15485.	15574.	15667.
	H-H0	22340.	22712.	23102.	23512.	23941.	24392.	24865.	25362.	25884.	26433.	27010.
	(S-S0)/R	-0.1957	-0.3250	-0.4466	-0.5618	-0.6718	-0.7773	-0.8790	-0.9775	-1.0732	-1.1665	-1.2578
2800.	U-U0	15051.	15112.	15175.	15242.	15311.	15384.	15461.	15542.	15626.	15715.	15809.
	H-H0	22530.	22905.	23297.	23709.	24140.	24593.	25069.	25568.	26093.	26644.	27224.
	(S-S0)/R	-0.1708	-0.3000	-0.4214	-0.5368	-0.6467	-0.7521	-0.8537	-0.9521	-1.0477	-1.1410	-1.2321
2820.	U-U0	15188.	15250.	15314.	15381.	15451.	15524.	15601.	15683.	15768.	15857.	15951.
	H-H0	22721.	23098.	23492.	23906.	24343.	24795.	25273.	25775.	26302.	26856.	27438.
	(S-S0)/R	-0.1461	-0.2753	-0.3967	-0.5118	-0.6217	-0.7270	-0.8285	-0.9269	-1.0224	-1.1155	-1.2066
2840.	U-U0	15327.	15389.	15453.	15520.	15590.	15664.	15742.	15824.	15909.	15999.	16094.
	H-H0	22913.	23291.	23687.	24103.	24539.	24997.	25477.	25981.	26511.	27067.	27653.
	(S-S0)/R	-0.1215	-0.2506	-0.3720	-0.4871	-0.5968	-0.7021	-0.8035	-0.9018	-0.9972	-1.0903	-1.1812
2860.	U-U0	15466.	15527.	15592.	15660.	15730.	15805.	15883.	15965.	16051.	16142.	16237.
	H-H0	23104.	23484.	23883.	24301.	24739.	25199.	25681.	26188.	26720.	27279.	27867.
	(S-S0)/R	-0.0971	-0.2261	-0.3474	-0.4624	-0.5721	-0.6773	-0.7787	-0.8768	-0.9722	-1.0651	-1.1560
2880.	U-U0	15604.	15666.	15731.	15799.	15871.	15945.	16024.	16106.	16193.	16284.	16380.
	H-H0	23295.	23678.	24078.	24498.	24939.	25401.	25885.	26395.	26929.	27491.	28081.
	(S-S0)/R	-0.0728	-0.2017	-0.3230	-0.4379	-0.5475	-0.6526	-0.7539	-0.8520	-0.9472	-1.0401	-1.1309
2900.	U-U0	15743.	15805.	15871.	15939.	16011.	16086.	16165.	16248.	16335.	16427.	16523.
	H-H0	23487.	23871.	24274.	24696.	25139.	25603.	26090.	26601.	27139.	27703.	28296.
	(S-S0)/R	-0.0486	-0.1775	-0.2987	-0.4135	-0.5230	-0.6281	-0.7293	-0.8273	-0.9225	-1.0153	-1.1060
2920.	U-U0	15882.	15945.	16010.	16079.	16151.	16227.	16307.	16390.	16478.	16570.	16666.
	H-H0	23679.	24065.	24470.	24894.	25339.	25805.	26295.	26809.	27348.	27915.	28511.
	(S-S0)/R	-0.0244	-0.1534	-0.2745	-0.3893	-0.4987	-0.6037	-0.7048	-0.8027	-0.8978	-0.9905	-1.0812
2940.	U-U0	16021.	16084.	16150.	16220.	16292.	16368.	16448.	16532.	16620.	16713.	16810.
	H-H0	23871.	24259.	24666.	25092.	25539.	26008.	26499.	27016.	27558.	28127.	28726.
	(S-S0)/R	-0.0007	-0.1294	-0.2505	-0.3652	-0.4746	-0.5794	-0.6805	-0.7783	-0.8733	-0.9660	-1.0565
2960.	U-U0	16160.	16224.	16293.	16360.	16433.	16510.	16590.	16674.	16763.	16856.	16954
	H-H0	24063.	24453.	24862.	25290.	25739.	26213.	26704.	27223.	27768.	28340.	28941.
	(S-S0)/R	0.0231	-0.1056	-0.2266	-0.3412	-0.4505	-0.5553	-0.6563	-0.7540	-0.8490	-0.9415	-1.0320
2980.	U-U0	16300.	16364.	16431.	16501.	16574.	16651.	16732.	16817.	16906.	16999.	17098.
	H-H0	24256.	24648.	25058.	25489.	25946	26413.	26909.	27430.	27977	28552.	29156.
	(S-S0)/R	0.0467	-0.0819	-0.2028	-0.3174	-0.4268	-0.5313	-0.6322	-0.7299	-0.8248	-0.9172	-1.0076
3000.	U-U0	16440.	16504.	16571.	16642	16716.	16793.	16874.	16960.	17049.	17142.	17242
	H-H0	24448.	24842.	25255.	25687.	26141.	26616.	27115.	27638.	28187.	28764.	29371.
	(S-S0)/R	0.0703	-0.0583	-0.1792	-0.2936	-0.4028	-0.5075	-0.6082	-0.7059	-0.8007	-0.8931	-0.9833

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY (AMAGAT)										
		1050.	1100.	1150.	1200.	1250.	1300.	1350.	1400.	1450.	1500.	1550.
2580.	U-U0	14343.	14441.	14543.	14655.	14759.	14889.	15016.	15150.	15291.	15441.	15600.
	H-H0	25456.	26066.	26708.	27386.	28119.	28854.	29650.	30491.	31386.	[illegible]	[illegible]
	(S-S0)/R	-1.6136	-1.7027	-1.7905	-1.8775	-1.9631	-2.0483	-2.1320	-2.2168	-2.3004	-2.3848	-2.4683
2600.	U-U0	14488.	14586.	14689.	14798.	14912.	15033.	15160.	15295.	15438.	15588.	15748.
	H-H0	25671.	26284.	26930.	27610.	28338.	29086.	29885.	30730.	31622.	32566.	33565.
	(S-S0)/R	-1.5862	-1.6752	-1.7629	-1.8496	-1.9353	-2.0203	-2.1047	-2.1885	-2.2720	-2.3553	-2.4383
2620.	U-U0	14629.	14728.	14831.	14943.	15056.	15177.	15305.	15441.	15584.	15735.	15893.
	H-H0	25887.	26503.	27152.	27835.	28556.	29317.	30120.	30968.	31865.	[illegible]	33815.
	(S-S0)/R	-1.5590	-1.6479	-1.7355	-1.8220	-1.9076	-1.9925	-2.0766	-2.1605	-2.2438	[illegible]	-2.4097
2640.	U-U0	14770.	14869.	14974.	15083.	15199.	15321.	15450.	15587.	15731.	15883.	16044.
	H-H0	26103.	26722.	27371.	28060.	28785.	29549.	30355.	31207.	32107.	33058.	34065.
	(S-S0)/R	-1.5320	-1.6204	-1.7082	-1.7946	-1.8801	-1.9649	-2.0491	-2.1326	-2.2158	-2.2987	-2.3814
2660.	U-U0	14912.	15011.	15116.	15227.	15343.	15466.	15596.	15733.	15877.	[illegible]	16192.
	H-H0	26319.	26941.	27595.	28285.	29013.	29781.	30590.	31446.	32349.	[illegible]	34315.
	(S-S0)/R	-1.5052	-1.5936	-1.6812	-1.7674	-1.8528	-1.9374	-2.0214	-2.1048	-2.1879	[illegible]	-2.3532
2680.	U-U0	15053.	15155.	15259.	15370.	15487.	15611.	15741.	15879.	16024.	[illegible]	16340.
	H-H0	26535.	27160.	27817.	28511.	29241.	30012.	30826.	31684.	32592.	[illegible]	34565.
	(S-S0)/R	-1.4785	-1.5673	-1.6542	-1.7404	-1.8256	-1.9101	-1.9939	-2.0773	-2.1602	-2.2428	-2.3252
2700.	U-U0	15195.	15298.	15402.	15514.	15631.	15756.	15887.	16025.	16171.	[illegible]	16489.
	H-H0	26751.	27379.	28040.	28736.	29470.	30244.	31061.	31923.	32834.	[illegible]	34815.
	(S-S0)/R	-1.4519	-1.5403	-1.6275	-1.7135	-1.7986	-1.8830	-1.9667	-2.0499	-2.1327	[illegible]	-2.2974
2720.	U-U0	15337.	15438.	15545.	15657.	15776.	15901.	16033.	16172.	16319.	16474.	16638.
	H-H0	26968.	27598.	28262.	28961.	29698.	30476.	31296.	32162.	33076.	[illegible]	35065.
	(S-S0)/R	-1.4255	-1.5139	-1.6009	-1.6868	-1.7718	-1.8560	-1.9396	-2.0227	-2.1053	-2.1876	-2.2697
2740.	U-U0	15479.	15581.	15688.	15801.	15921.	16046.	16179.	16318.	16466.	[illegible]	16787.
	H-H0	27184.	27817.	28484.	29187.	29927.	30708.	31531.	32401.	33319.	34289.	35315.
	(S-S0)/R	-1.3993	-1.4875	-1.5744	-1.6602	-1.7451	-1.8292	-1.9127	-1.9956	-2.0781	-2.1603	-2.2422
2760.	U-U0	15622.	15724.	15832.	15946.	16065.	16192.	16325.	16465.	16614.	[illegible]	16936.
	H-H0	27401.	28037.	28706.	29412.	30156.	30949.	31767.	32640.	33561.	[illegible]	35565.
	(S-S0)/R	-1.3732	-1.4613	-1.5481	-1.6338	-1.7186	-1.8026	-1.8859	-1.9687	-2.0511	[illegible]	-2.2149
2780.	U-U0	15764.	15867.	15976.	16090.	16210.	16337.	16471.	16612.	16762.	16919.	17086.
	H-H0	27617.	28256.	28929.	29658.	30384.	31172.	32002.	32878.	33804.	34781.	35815.
	(S-S0)/R	-1.3473	-1.4353	-1.5220	-1.6076	-1.6922	-1.7761	-1.8593	-1.9420	-2.0242	[illegible]	-2.1878
2800.	U-U0	15907.	16011.	16120.	16235.	16356.	16483.	16618.	16760.	16910.	[illegible]	[illegible]
	H-H0	27834.	28476.	29152.	29863.	30613.	31404.	32237.	33117.	34046.	[illegible]	[illegible]
	(S-S0)/R	-1.3216	-1.4094	-1.4960	-1.5815	-1.6660	-1.7498	-1.8329	-1.9154	-1.9975	-2.0793	-2.1608
2820.	U-U0	16050.	16154.	16264.	16379.	16501.	16629.	16764.	16907.	17058.	[illegible]	17385.
	H-H0	28051.	28696.	29374.	30089.	30842.	31636.	32473.	33356.	34289.	35274.	36314.
	(S-S0)/R	-1.2959	-1.3837	-1.4702	-1.5556	-1.6400	-1.7236	-1.8066	-1.8890	-1.9709	-2.0526	-2.1340
2840.	U-U0	16193.	16298.	16408.	16524.	16647.	16776.	16911.	17055.	17206.	17366.	17535.
	H-H0	28268.	28916.	29597.	30315.	31071.	31868.	32708.	33595.	34531.	[illegible]	36564.
	(S-S0)/R	-1.2705	-1.3582	-1.4445	-1.5298	-1.6141	-1.6976	-1.7804	-1.8627	-1.9445	[illegible]	-2.1073
2860.	U-U0	16337.	16442.	16553.	16670.	16792.	16922.	17059.	17203.	17355.	17515.	17685.
	H-H0	28485.	29135.	29820.	30541.	31300.	32100.	32944.	33834.	34774.	35766.	36814.
	(S-S0)/R	-1.2451	-1.3327	-1.4190	-1.5041	-1.5883	-1.6717	-1.7544	-1.8366	-1.9183	-1.9997	-2.0808
2880.	U-U0	16480.	16586.	16698.	16815.	16938.	17069.	17206.	17351.	17503.	17665.	17835.
	H-H0	28702.	29354.	30043.	30767.	31529.	32333.	33180.	34073.	35016.	[illegible]	37064.
	(S-S0)/R	-1.2203	-1.3074	-1.3936	-1.4787	-1.5627	-1.6460	-1.7286	-1.8106	-1.8922	[illegible]	-2.0544
2900.	U-U0	16624.	16731.	16843.	16960.	17085.	17215.	17353.	17499.	17652.	[illegible]	17986.
	H-H0	28920.	29576.	30266.	30993.	31758.	32565.	33415.	34312.	35259.	[illegible]	37314.
	(S-S0)/R	-1.1949	-1.2823	-1.3684	-1.4533	-1.5373	-1.6204	-1.7029	-1.7848	-1.8663	-1.9474	-2.0282
2920.	U-U0	16768.	16875.	16988.	17106.	17231.	17362.	17501.	17647.	17801.	17964.	[illegible]
	H-H0	29137.	29798.	30488.	31219.	31988.	32797.	33651.	34551.	35502.	[illegible]	37564.
	(S-S0)/R	-1.1700	-1.2573	-1.3433	-1.4281	-1.5120	-1.5950	-1.6774	-1.7592	-1.8405	[illegible]	[illegible]
2940.	U-U0	16912.	17020.	17133.	17252.	17377.	17509.	17649.	17796.	17951.	[illegible]	[illegible]
	H-H0	29355.	30016.	30712.	31445.	32217.	33030.	33887.	34791.	35744.	[illegible]	[illegible]
	(S-S0)/R	-1.1452	-1.2324	-1.3183	-1.4030	-1.4868	-1.5697	-1.6520	-1.7337	-1.8149	-1.8957	-1.9763
2960.	U-U0	17057.	17165.	17278.	17398.	17524.	17657.	17797.	17944.	18100.	[illegible]	18438.
	H-H0	29572.	30237.	30936.	31671.	32446.	33262.	[illegible]	35030.	35987.	[illegible]	[illegible]
	(S-S0)/R	-1.1206	-1.2077	-1.2935	-1.3781	-1.4618	-1.5448	-1.6267	-1.7083	-1.7894	[illegible]	-1.9505
2980.	U-U0	17201.	17310.	17424.	17544.	17671.	17804.	17945.	18093.	18249.	[illegible]	[illegible]
	H-H0	29790.	30457.	31159.	31898.	32676.	33495.	34359.	35269.	36229.	[illegible]	38314.
	(S-S0)/R	-1.0961	-1.1831	-1.2688	-1.3533	-1.4369	-1.5196	-1.6016	-1.6831	-1.7640	-1.8445	-1.9249
3000.	U-U0	17346.	17455.	17570.	17691.	17818.	17952.	18093.	18242.	18399.	[illegible]	18740.
	H-H0	30008.	30678.	31383.	32124.	32905.	33728.	34594.	35508.	36472.	[illegible]	38563.
	(S-S0)/R	-1.0716	-1.1587	-1.2443	-1.3287	-1.4121	-1.4947	-1.5766	-1.6580	-1.7388	[illegible]	-1.8995

(Table continues)

Table 3 (Continued)

RELATIVE INTERNAL ENERGY AND ENTHALPY (CALORIES/GM-MOLE) AND RELATIVE ENTROPY

TEMPERATURE (DEGREE K)		DENSITY(AMAGAT)								
		1600.	1650.	1700.	1750.	1800.	1850.	1900.	1950.	2000.
2580.	U-U0	15767.	15945.	16134.	16333.	16545.	16770.	17010.	17264.	17539.
	H-H0	34368.	35483.	36665.	37919.	39249.	40662.	42164.	43760.	45459.
	(S-S0)/R	-2.5501	-2.6331	-2.7162	-2.7993	-2.8826	-2.9662	-3.0498	-3.1338	-3.2180
2600.	U-U0	15916.	16099.	16284.	16489.	16698.	16920.	17164.	17428.	17691.
	H-H0	34622.	35741.	36928.	38184.	39521.	40938.	42444.	44046.	45749.
	(S-S0)/R	-2.5212	-2.6040	-2.6869	-2.7699	-2.8530	-2.9363	-3.0198	-3.1034	-3.1876
2620.	U-U0	16069.	16244.	16435.	16636.	16858.	17077.	17319.	17575.	17848.
	H-H0	34876.	35998.	37186.	38453.	39792.	41214.	42725.	44331.	46040.
	(S-S0)/R	-2.4925	-2.5752	-2.6579	-2.7407	-2.8236	-2.9067	-2.9900	-3.0735	-3.1573
2640.	U-U0	16214.	16394.	16585.	16788.	17003.	17231.	17473.	17731.	18005.
	H-H0	35131.	36258.	37452.	38719.	40063.	41496.	43006.	44616.	46336.
	(S-S0)/R	-2.4644	-2.5465	-2.6290	-2.7116	-2.7944	-2.8773	-2.9604	-3.0437	-3.1275
2660.	U-U0	16363.	16544.	16736.	16940.	17156.	17385.	17628.	17887.	18162.
	H-H0	35384.	36516.	37715.	38986.	40334.	41766.	43286.	44901.	46629.
	(S-S0)/R	-2.4360	-2.5183	-2.6004	-2.6828	-2.7653	-2.8481	-2.9310	-3.0141	-3.0975
2680.	U-U0	16512.	16695.	16887.	17092.	17309.	17539.	17783.	18043.	18319.
	H-H0	35638.	36774.	37977.	39253.	40606.	42041.	43566.	45186.	46909.
	(S-S0)/R	-2.4079	-2.4897	-2.5719	-2.6541	-2.7365	-2.8190	-2.9017	-2.9847	-3.0678
2700.	U-U0	16662.	16845.	17036.	17244.	17462.	17693.	17938.	18199.	18476.
	H-H0	35892.	37032.	38239.	39519.	40876.	42317.	43846.	45471.	47199.
	(S-S0)/R	-2.3799	-2.4615	-2.5436	-2.6256	-2.7078	-2.7902	-2.8727	-2.9554	-3.0384
2720.	U-U0	16812.	16995.	17190.	17396.	17615.	17847.	18094.	18356.	18634.
	H-H0	36146.	37290.	38502.	39786.	41147.	42592.	44126.	45756.	47488.
	(S-S0)/R	-2.3517	-2.4335	-2.5154	-2.5973	-2.6794	-2.7615	-2.8438	-2.9264	-3.0092
2740.	U-U0	16962.	17146.	17342.	17549.	17769.	18002.	18249.	18512.	18791.
	H-H0	36400.	37548.	38764.	40052.	41418.	42867.	44406.	46040.	47777.
	(S-S0)/R	-2.3240	-2.4058	-2.4875	-2.5692	-2.6510	-2.7330	-2.8152	-2.8975	-2.9801
2760.	U-U0	17112.	17297.	17494.	17702.	17922.	18156.	18405.	18669.	18949.
	H-H0	36653.	37806.	39026.	40318.	41689.	43142.	44685.	46324.	48066.
	(S-S0)/R	-2.2966	-2.3781	-2.4597	-2.5413	-2.6229	-2.7047	-2.7867	-2.8689	-2.9512
2780.	U-U0	17262.	17448.	17645.	17854.	18076.	18311.	18561.	18825.	19107.
	H-H0	36907.	38063.	39288.	40585.	41959.	43417.	44965.	46608.	48355.
	(S-S0)/R	-2.2693	-2.3507	-2.4321	-2.5135	-2.5950	-2.6766	-2.7584	-2.8404	-2.9226
2800.	U-U0	17412.	17599.	17798.	18007.	18230.	18466.	18716.	18982.	19265.
	H-H0	37161.	38321.	39550.	40851.	42230.	43692.	45244.	46892.	48644.
	(S-S0)/R	-2.2421	-2.3234	-2.4046	-2.4859	-2.5672	-2.6487	-2.7303	-2.8121	-2.8941
2820.	U-U0	17563.	17751.	17950.	18161.	18384.	18621.	18872.	19139.	19423.
	H-H0	37415.	38579.	39811.	41117.	42500.	43967.	45523.	47176.	48932.
	(S-S0)/R	-2.2152	-2.2963	-2.3773	-2.4584	-2.5396	-2.6209	-2.7023	-2.7839	-2.8657
2840.	U-U0	17713.	17902.	18102.	18314.	18538.	18776.	19029.	19297.	19581.
	H-H0	37668.	38837.	40073.	41383.	42770.	44242.	45803.	47460.	49220.
	(S-S0)/R	-2.1884	-2.2695	-2.3502	-2.4312	-2.5122	-2.5933	-2.6745	-2.7560	-2.8376
2860.	U-U0	17864.	18054.	18255.	18467.	18693.	18932.	19185.	19454.	19740.
	H-H0	37922.	39095.	40335.	41649.	43040.	44516.	46081.	47743.	49509.
	(S-S0)/R	-2.1617	-2.2425	-2.3233	-2.4041	-2.4849	-2.5658	-2.6469	-2.7282	-2.8096
2880.	U-U0	18015.	18206.	18408.	18621.	18847.	19087.	19341.	19611.	19898.
	H-H0	38176.	39352.	40597.	41914.	43311.	44790.	46360.	48027.	49798.
	(S-S0)/R	-2.1352	-2.2159	-2.2965	-2.3771	-2.4578	-2.5386	-2.6195	-2.7006	-2.7818
2900.	U-U0	18167.	18358.	18560.	18775.	19002.	19243.	19498.	19769.	20057.
	H-H0	38430.	39610.	40858.	42180.	43581.	45065.	46639.	48310.	50086.
	(S-S0)/R	-2.1089	-2.1894	-2.2699	-2.3503	-2.4309	-2.5115	-2.5922	-2.6731	-2.7542
2920.	U-U0	18318.	18510.	18713.	18929.	19157.	19398.	19655.	19927.	20215.
	H-H0	38684.	39867.	41120.	42446.	43850.	45339.	46918.	48593.	50372.
	(S-S0)/R	-2.0827	-2.1631	-2.2434	-2.3237	-2.4041	-2.4845	-2.5651	-2.6458	-2.7267
2940.	U-U0	18469.	18662.	18867.	19083.	19312.	19554.	19811.	20084.	20374.
	H-H0	38937.	40125.	41382.	42712.	44120.	45613.	47196.	48876.	50659.
	(S-S0)/R	-2.0567	-2.1369	-2.2171	-2.2972	-2.3774	-2.4577	-2.5382	-2.6187	-2.6995
2960.	U-U0	18621.	18815.	19020.	19237.	19467.	19710.	19968.	20242.	20533.
	H-H0	39191.	40383.	41643.	42977.	44390.	45887.	47474.	49159.	50946.
	(S-S0)/R	-2.0308	-2.1109	-2.1909	-2.2709	-2.3510	-2.4311	-2.5114	-2.5918	-2.6723
2980.	U-U0	18773.	18968.	19173.	19391.	19622.	19866.	20126.	20400.	20692.
	H-H0	39445.	40640.	41905.	43243.	44660.	46161.	47753.	49441.	51234.
	(S-S0)/R	-2.0050	-2.0850	-2.1649	-2.2448	-2.3247	-2.4046	-2.4847	-2.5650	-2.6454
3000.	U-U0	18925.	19120.	19327.	19546.	19777.	20023.	20283.	20559.	20851.
	H-H0	39698.	40898.	42168.	43508.	44929.	46435.	48031.	49724.	51521.
	(S-S0)/R	-1.9794	-2.0593	-2.1390	-2.2188	-2.2985	-2.3783	-2.4583	-2.5383	-2.6186

Table 4
Selected Hydrogen Properties and the Portions Thereof Contributed by Each Energy Factor

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DENSITY =     1.00 (AMAGAT)
VOLUME  = 22428.00 (CC/MOLE)

  T(K)      P(ATM)     U/RT      H/RT    (S-S0)/R    CV/R      CP/R

  500.        1.83     2.452     3.453     1.509     2.520     3.519   TOTAL
                       1.500     2.500     0.907     1.500     2.500   TRANSLATION
                       0.000     0.001     0.000     0.000     0.000   POTENTIAL
                       0.952     0.952     0.602     1.019     1.019   VIBR/ROT

  600.        2.20     2.464     3.465     1.969     2.528     3.528   TOTAL
                       1.500     2.500     1.180     1.500     2.500   TRANSLATION
                       0.000     0.001     0.000     0.000     0.000   POTENTIAL
                       0.964     0.964     0.789     1.028     1.028   VIBR/ROT

  800.        2.93     2.484     3.484     2.700     2.563     3.563   TOTAL
                       1.500     2.500     1.612     1.500     2.500   TRANSLATION
                       0.000     0.001     0.000     0.000    -0.000   POTENTIAL
                       0.983     0.983     1.089     1.063     1.063   VIBR/ROT

 1000.        3.65     2.506     3.507     3.279     2.633     3.633   TOTAL
                       1.500     2.500     1.946     1.500     2.500   TRANSLATION
                       0.000     0.001     0.000     0.000    -0.000   POTENTIAL
                       1.006     1.006     1.333     1.133     1.133   VIBR/ROT

 1200.        4.39     2.535     3.536     3.767     2.728     3.727   TOTAL
                       1.500     2.500     2.220     1.500     2.500   TRANSLATION
                       0.000     0.001     0.000     0.000    -0.000   POTENTIAL
                       1.035     1.035     1.547     1.228     1.228   VIBR/ROT

 1500.        5.49     2.589     3.590     4.393     2.884     3.884   TOTAL
                       1.500     2.500     2.554     1.500     2.500   TRANSLATION
                       0.000     0.001     0.000     0.000    -0.000   POTENTIAL
                       1.089     1.089     1.838     1.384     1.384   VIBR/ROT

 2000.        7.32     2.693     3.694     5.256     3.120     4.120   TOTAL
                       1.500     2.500     2.986     1.500     2.500   TRANSLATION
                       0.000     0.001     0.000     0.000    -0.000   POTENTIAL
                       1.193     1.193     2.270     1.620     1.620   VIBR/ROT

 2500.        9.15     2.798     3.798     5.973     3.302     4.302   TOTAL
                       1.500     2.500     3.321     1.500     2.500   TRANSLATION
                       0.000     0.001     0.000     0.000    -0.000   POTENTIAL
                       1.298     1.298     2.652     1.802     1.802   VIBR/ROT

 3000.       10.98     2.894     3.895     6.588     3.441     4.441   TOTAL
                       1.500     2.500     3.594     1.500     2.500   TRANSLATION
                       0.000     0.001     0.000     0.000    -0.000   POTENTIAL
                       1.394     1.394     2.993     1.941     1.941   VIBR/ROT
```

(Table continues)

Table 4 (Continued)

DENSITY = 10.00 (AMAGAT)
VOLUME = 2242.80 (CC/MOLE)

T(K)	P(ATM)	U/RT	H/RT	(S-S0)/R	CV/R	CP/R	
500.	18.46	2.452	3.462	-0.801	2.521	3.520	TOTAL
		1.500	2.500	-1.396	1.500	2.500	TRANSLATION
		0.001	0.010	-0.007	0.002	0.001	POTENTIAL
		0.952	0.952	0.602	1.019	1.019	VIBR/ROT
600.	22.15	2.465	3.473	-0.341	2.529	3.528	TOTAL
		1.500	2.500	-1.123	1.500	2.500	TRANSLATION
		0.001	0.010	-0.007	0.002	0.000	POTENTIAL
		0.964	0.964	0.789	1.028	1.028	VIBR/ROT
800.	29.52	2.484	3.493	0.391	2.565	3.563	TOTAL
		1.500	2.500	-0.691	1.500	2.500	TRANSLATION
		0.001	0.010	-0.007	0.002	-0.000	POTENTIAL
		0.983	0.983	1.089	1.063	1.063	VIBR/ROT
1000.	36.89	2.507	3.515	0.970	2.635	3.632	TOTAL
		1.500	2.500	-0.356	1.500	2.500	TRANSLATION
		0.001	0.010	-0.006	0.002	-0.001	POTENTIAL
		1.006	1.006	1.333	1.133	1.133	VIBR/ROT
1200.	44.26	2.536	3.544	1.459	2.729	3.727	TOTAL
		1.500	2.500	-0.083	1.500	2.500	TRANSLATION
		0.001	0.009	-0.006	0.002	-0.001	POTENTIAL
		1.035	1.035	1.547	1.228	1.228	VIBR/ROT
1500.	55.31	2.590	3.598	2.084	2.886	3.883	TOTAL
		1.500	2.500	0.252	1.500	2.500	TRANSLATION
		0.001	0.009	-0.006	0.002	-0.001	POTENTIAL
		1.089	1.089	1.838	1.384	1.384	VIBR/ROT
2000.	73.72	2.695	3.702	2.948	3.121	4.119	TOTAL
		1.500	2.500	0.683	1.500	2.500	TRANSLATION
		0.001	0.009	-0.005	0.001	-0.001	POTENTIAL
		1.193	1.193	2.270	1.620	1.620	VIBR/ROT
2500.	92.13	2.799	3.806	3.665	3.303	4.300	TOTAL
		1.500	2.500	1.018	1.500	2.500	TRANSLATION
		0.001	0.009	-0.005	0.001	-0.001	POTENTIAL
		1.298	1.298	2.652	1.802	1.802	VIBR/ROT
3000.	110.52	2.895	3.902	4.280	3.442	4.439	TOTAL
		1.500	2.500	1.292	1.500	2.500	TRANSLATION
		0.001	0.008	-0.005	0.001	-0.001	POTENTIAL
		1.394	1.394	2.993	1.941	1.941	VIBR/ROT

(Table continues)

Table 4 (Continued)

```
DENSITY =   100.00 (AMAGAT)
VOLUME  =   224.28 (CC/MOLE)

  T(K)     P(ATM)     U/RT     H/RT   (S-S0)/R    CV/R     CP/R

  500.     200.40    2.459    3.554    -3.181    2.538    3.528   TOTAL
                     1.500    2.500    -3.699    1.500    2.500   TRANSLATION
                     0.007    0.102    -0.085    0.019    0.009   POTENTIAL
                     0.952    0.952     0.602    1.019    1.019   VIBR/ROT

  600.     240.14    2.473    3.567    -2.718    2.546    3.532   TOTAL
                     1.500    2.500    -3.425    1.500    2.500   TRANSLATION
                     0.009    0.103    -0.081    0.018    0.004   POTENTIAL
                     0.964    0.964     0.789    1.028    1.028   VIBR/ROT

  800.     319.28    2.495    3.585    -1.981    2.581    3.562   TOTAL
                     1.500    2.500    -2.994    1.500    2.500   TRANSLATION
                     0.011    0.102    -0.076    0.018   -0.001   POTENTIAL
                     0.983    0.983     1.089    1.063    1.063   VIBR/ROT

 1000.     398.08    2.518    3.606    -1.399    2.650    3.629   TOTAL
                     1.500    2.500    -2.659    1.500    2.500   TRANSLATION
                     0.012    0.100    -0.072    0.017   -0.004   POTENTIAL
                     1.006    1.006     1.333    1.133    1.133   VIBR/ROT

 1200.     476.62    2.548    3.633    -0.907    2.744    3.721   TOTAL
                     1.500    2.500    -2.385    1.500    2.500   TRANSLATION
                     0.013    0.099    -0.069    0.016   -0.007   POTENTIAL
                     1.035    1.035     1.547    1.228    1.228   VIBR/ROT

 1500.     594.05    2.603    3.685    -0.279    2.900    3.876   TOTAL
                     1.500    2.500    -2.051    1.500    2.500   TRANSLATION
                     0.014    0.096    -0.066    0.016   -0.009   POTENTIAL
                     1.089    1.089     1.838    1.384    1.384   VIBR/ROT

 2000.     789.00    2.707    3.786     0.589    3.135    4.109   TOTAL
                     1.500    2.500    -1.619    1.500    2.500   TRANSLATION
                     0.014    0.092    -0.061    0.015   -0.010   POTENTIAL
                     1.193    1.193     2.270    1.620    1.620   VIBR/ROT

 2500.     983.24    2.812    3.887     1.309    3.316    4.290   TOTAL
                     1.500    2.500    -1.285    1.500    2.500   TRANSLATION
                     0.014    0.089    -0.058    0.014   -0.011   POTENTIAL
                     1.298    1.298     2.652    1.802    1.802   VIBR/ROT

 3000.    1176.93    2.908    3.980     1.926    3.454    4.429   TOTAL
                     1.500    2.500    -1.011    1.500    2.500   TRANSLATION
                     0.014    0.086    -0.056    0.014   -0.012   POTENTIAL
                     1.394    1.394     2.993    1.941    1.941   VIBR/ROT
```

(Table continues)

Table 4 (Continued)

DENSITY = 500.00 (AMAGAT)
VOLUME = 44.86 (CC/MOLE)

T(K)	P(ATM)	U/RT	H/RT	(S-S0)/R	CV/R	CP/R	
500.	1473.47	2.496	4.107	-5.185	2.640	3.634	TOTAL
		1.500	2.500	-5.308	1.500	2.500	TRANSLATION
		0.045	0.656	-0.479	0.121	0.115	POTENTIAL
		0.952	0.952	0.602	1.019	1.019	VIBR/ROT
600.	1754.64	2.521	4.119	-4.703	2.644	3.615	TOTAL
		1.500	2.500	-5.035	1.500	2.500	TRANSLATION
		0.057	0.656	-0.458	0.116	0.087	POTENTIAL
		0.964	0.964	0.789	1.028	1.028	VIBR/ROT
800.	2303.84	2.554	4.128	-3.940	2.672	3.615	TOTAL
		1.500	2.500	-4.603	1.500	2.500	TRANSLATION
		0.071	0.645	-0.425	0.109	0.052	POTENTIAL
		0.983	0.983	1.089	1.063	1.063	VIBR/ROT
1000.	2840.07	2.584	4.136	-3.337	2.736	3.664	TOTAL
		1.500	2.500	-4.268	1.500	2.500	TRANSLATION
		0.078	0.630	-0.402	0.103	0.031	POTENTIAL
		1.006	1.006	1.333	1.133	1.133	VIBR/ROT
1200.	3366.65	2.616	4.150	-2.831	2.826	3.744	TOTAL
		1.500	2.500	-3.995	1.500	2.500	TRANSLATION
		0.082	0.615	-0.383	0.099	0.016	POTENTIAL
		1.035	1.035	1.547	1.228	1.228	VIBR/ROT
1500.	4142.75	2.673	4.183	-2.184	2.978	3.886	TOTAL
		1.500	2.500	-3.660	1.500	2.500	TRANSLATION
		0.085	0.594	-0.362	0.093	0.002	POTENTIAL
		1.089	1.089	1.838	1.384	1.384	VIBR/ROT
2000.	5409.27	2.779	4.258	-1.295	3.207	4.107	TOTAL
		1.500	2.500	-3.229	1.500	2.500	TRANSLATION
		0.086	0.564	-0.336	0.087	-0.012	POTENTIAL
		1.193	1.193	2.270	1.620	1.620	VIBR/ROT
2500.	6651.34	2.883	4.338	-0.559	3.384	4.281	TOTAL
		1.500	2.500	-2.894	1.500	2.500	TRANSLATION
		0.086	0.540	-0.317	0.082	-0.021	POTENTIAL
		1.298	1.298	2.652	1.802	1.802	VIBR/ROT
3000.	7875.26	2.978	4.413	0.070	3.519	4.414	TOTAL
		1.500	2.500	-2.620	1.500	2.500	TRANSLATION
		0.085	0.520	-0.302	0.078	-0.027	POTENTIAL
		1.394	1.394	2.993	1.941	1.941	VIBR/ROT

(Table continues)

Table 4 (Continued)

```
DENSITY =  1000.00 (AMAGAT)
VØLUME  =    22.43 (CC/MØLE)

  T(K)     P(ATM)     U/RT     H/RT   (S-S0)/R    CV/R      CP/R

  500.    5022.73    2.579    5.325    -6.526    2.860     3.946   TØTAL
                     1.500    2.500    -6.001    1.500     2.500   TRANSLATIØN
                     0.127    1.873    -1.127    0.340     0.426   PØTENTIAL
                     0.952    0.952     0.602    1.019     1.019   VIBR/RØT

  600.    5924.50    2.625    5.324    -6.005    2.851     3.876   TØTAL
                     1.500    2.500    -5.728    1.500     2.500   TRANSLATIØN
                     0.161    1.860    -1.066    0.323     0.348   PØTENTIAL
                     0.964    0.964     0.789    1.028     1.028   VIBR/RØT

  800.    7632.92    2.682    5.289    -5.185    2.858     3.811   TØTAL
                     1.500    2.500    -5.296    1.500     2.500   TRANSLATIØN
                     0.198    1.806    -0.977    0.295     0.247   PØTENTIAL
                     0.983    0.983     1.089    1.063     1.063   VIBR/RØT

 1000.    9250.74    2.721    5.250    -4.543    2.907     3.819   TØTAL
                     1.500    2.500    -4.962    1.500     2.500   TRANSLATIØN
                     0.215    1.744    -0.914    0.274     0.186   PØTENTIAL
                     1.006    1.006     1.333    1.133     1.133   VIBR/RØT

 1200.   10803.76    2.758    5.219    -4.006    2.985     3.871   TØTAL
                     1.500    2.500    -4.688    1.500     2.500   TRANSLATIØN
                     0.224    1.684    -0.866    0.257     0.144   PØTENTIAL
                     1.035    1.035     1.547    1.228     1.228   VIBR/RØT

 1500.   13044.09    2.817    5.194    -3.326    3.123     3.985   TØTAL
                     1.500    2.500    -4.353    1.500     2.500   TRANSLATIØN
                     0.228    1.605    -0.810    0.239     0.101   PØTENTIAL
                     1.089    1.089     1.838    1.384     1.384   VIBR/RØT

 2000.   16609.46    2.921    5.191    -2.397    3.336     4.178   TØTAL
                     1.500    2.500    -3.922    1.500     2.500   TRANSLATIØN
                     0.228    1.498    -0.745    0.217     0.058   PØTENTIAL
                     1.193    1.193     2.270    1.620     1.620   VIBR/RØT

 2500.   20027.49    3.022    5.211    -1.634    3.503     4.333   TØTAL
                     1.500    2.500    -3.587    1.500     2.500   TRANSLATIØN
                     0.224    1.414    -0.698    0.201     0.032   PØTENTIAL
                     1.298    1.298     2.652    1.802     1.802   VIBR/RØT

 3000.   23339.58    3.113    5.239    -0.983    3.630     4.455   TØTAL
                     1.500    2.500    -3.314    1.500     2.500   TRANSLATIØN
                     0.219    1.346    -0.663    0.190     0.014   PØTENTIAL
                     1.394    1.394     2.993    1.941     1.941   VIBR/RØT
```

(Table continues)

Table 4 (Continued)

DENSITY = 1500.00 (AMAGAT)
VOLUME = 14.95 (CC/MOLE)

T(K)	P(ATM)	U/RT	H/RT	(S-S0)/R	CV/R	CP/R	
500.	13741.25	2.744	7.752	-7.847	3.288	4.554	TOTAL
		1.500	2.500	-6.407	1.500	2.500	TRANSLATION
		0.293	4.300	-2.043	0.768	1.034	POTENTIAL
		0.952	0.952	0.602	1.019	1.019	VIBR/ROT
600.	16014.26	2.831	7.694	-7.252	3.241	4.379	TOTAL
		1.500	2.500	-6.133	1.500	2.500	TRANSLATION
		0.367	4.231	-1.907	0.714	0.852	POTENTIAL
		0.964	0.964	0.789	1.028	1.028	VIBR/ROT
800.	20146.93	2.926	7.515	-6.328	3.190	4.182	TOTAL
		1.500	2.500	-5.702	1.500	2.500	TRANSLATION
		0.442	4.031	-1.715	0.627	0.619	POTENTIAL
		0.983	0.983	1.089	1.063	1.063	VIBR/ROT
1000.	23905.11	2.979	7.334	-5.616	3.198	4.111	TOTAL
		1.500	2.500	-5.367	1.500	2.500	TRANSLATION
		0.473	3.829	-1.582	0.565	0.478	POTENTIAL
		1.006	1.006	1.333	1.133	1.133	VIBR/ROT
1200.	27409.02	3.019	7.181	-5.029	3.246	4.112	TOTAL
		1.500	2.500	-5.094	1.500	2.500	TRANSLATION
		0.484	3.646	-1.483	0.519	0.384	POTENTIAL
		1.035	1.035	1.547	1.228	1.228	VIBR/ROT
1500.	32330.88	3.074	7.002	-4.294	3.352	4.175	TOTAL
		1.500	2.500	-4.759	1.500	2.500	TRANSLATION
		0.486	3.413	-1.373	0.468	0.291	POTENTIAL
		1.089	1.089	1.838	1.384	1.384	VIBR/ROT
2000.	39932.48	3.167	6.805	-3.304	3.532	4.317	TOTAL
		1.500	2.500	-4.327	1.500	2.500	TRANSLATION
		0.474	3.112	-1.247	0.412	0.197	POTENTIAL
		1.193	1.193	2.270	1.620	1.620	VIBR/ROT
2500.	47032.01	3.255	6.683	-2.500	3.677	4.444	TOTAL
		1.500	2.500	-3.993	1.500	2.500	TRANSLATION
		0.457	2.885	-1.159	0.379	0.142	POTENTIAL
		1.298	1.298	2.652	1.802	1.802	VIBR/ROT
3000.	53784.35	3.335	6.602	-1.819	3.789	4.546	TOTAL
		1.500	2.500	-3.719	1.500	2.500	TRANSLATION
		0.441	2.708	-1.093	0.348	0.105	POTENTIAL
		1.394	1.394	2.993	1.941	1.941	VIBR/ROT

(Table continues)

Table 4 (Continued)

```
DENSITY =  2000.00 (AMAGAT)
VOLUME  =    11.21 (CC/MOLE)

  T(K)     P(ATM)     U/RT     H/RT   (S-S0)/R    CV/R     CP/R

  500.   36522.68    3.108   13.098    -9.507    4.197    5.733   TOTAL
                     1.500    2.500    -6.694    1.500    2.500   TRANSLATION
                     0.656    9.638    -3.415    1.678    2.213   POTENTIAL
                     0.952    0.952     0.602    1.019    1.019   VIBR/ROT

  600.   41888.25    3.276   12.816    -8.756    4.037    5.317   TOTAL
                     1.500    2.500    -6.421    1.500    2.500   TRANSLATION
                     0.812    9.353    -3.124    1.510    1.790   POTENTIAL
                     0.964    0.964     0.789    1.028    1.028   VIBR/ROT

  800.   51074.86    3.436   12.161    -7.628    3.817    4.828   TOTAL
                     1.500    2.500    -5.989    1.500    2.500   TRANSLATION
                     0.952    8.677    -2.727    1.254    1.265   POTENTIAL
                     0.983    0.983     1.089    1.063    1.063   VIBR/ROT

 1000.   58959.29    3.500   11.558    -6.789    3.714    4.592   TOTAL
                     1.500    2.500    -5.655    1.500    2.500   TRANSLATION
                     0.994    8.052    -2.467    1.081    0.959   POTENTIAL
                     1.006    1.006     1.333    1.133    1.133   VIBR/ROT

 1200.   66024.48    3.533   11.052    -6.115    3.687    4.491   TOTAL
                     1.500    2.500    -5.381    1.500    2.500   TRANSLATION
                     0.998    7.517    -2.281    0.960    0.763   POTENTIAL
                     1.035    1.035     1.547    1.228    1.228   VIBR/ROT

 1500.   75616.20    3.566   10.455    -5.290    3.718    4.459   TOTAL
                     1.500    2.500    -5.046    1.500    2.500   TRANSLATION
                     0.977    6.866    -2.082    0.834    0.575   POTENTIAL
                     1.089    1.089     1.838    1.384    1.384   VIBR/ROT

 2000.   89910.02    3.617    9.760    -4.206    3.824    4.516   TOTAL
                     1.500    2.500    -4.615    1.500    2.500   TRANSLATION
                     0.924    6.067    -1.861    0.704    0.396   POTENTIAL
                     1.193    1.193     2.270    1.620    1.620   VIBR/ROT

 2500.  102878.64    3.669    9.293    -3.342    3.926    4.596   TOTAL
                     1.500    2.500    -4.280    1.500    2.500   TRANSLATION
                     0.871    5.495    -1.713    0.624    0.294   POTENTIAL
                     1.298    1.298     2.652    1.802    1.802   VIBR/ROT

 3000.  114976.53    3.719    8.956    -2.619    4.009    4.669   TOTAL
                     1.500    2.500    -4.007    1.500    2.500   TRANSLATION
                     0.825    5.063    -1.605    0.568    0.228   POTENTIAL
                     1.394    1.394     2.993    1.941    1.941   VIBR/ROT
```

Appendix A

MOLECULAR POTENTIAL CORRECTION TO THERMODYNAMIC PROPERTIES

The purpose of this appendix is to develop the contributions of a dense gas to the thermodynamic properties that are due to the potential energy between the molecules. The starting point is the following equation which links classical and statistical thermodynamics:

$$P = RT\left(\frac{\partial}{\partial v}\, ln\ Q\right)_T \tag{A1}$$

or

$$\frac{Pv}{RT} = v\left(\frac{\partial}{\partial v}\, ln\ Q\right)_T . \tag{A2}$$

where Q is the total partition function.

Rowlinson* has suggested the following equation of state for dense gases:

$$\frac{Pv}{RT} = Z = \frac{1 + \xi + \xi^2}{(1 - \xi)^3} , \tag{A3}$$

where

$$\xi = \frac{b_m}{4v} z^{1/4}\left[1 + \frac{1}{12} F(z)\right]^3 .$$

in which

$$z = \frac{\epsilon}{kT}$$

and

$$F(z) = \gamma_e - \sum_{l=1}^{\infty} \frac{\left(\frac{l}{2} - 1\right)!\,(2\sqrt{z})^l}{l!} .$$

with γ_e being Euler's constant.

The volume dependent terms in the partition function are due to the translational and potential energy of the molecule. The contribution of the potential energy alone can be found by subtracting from the compressibility the contribution of the translational energy, which is a constant and equal to one. Then, by substituting Eq. (A3) into Eq. (A2) and integrating, the partition function associated with the potential energy (denoted by the subscript p) may be obtained as follows:

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*J. S. Rowlinson, "An Equation of State of Gases at High Temperatures and Densities," Mol. Phys. 7(No. 14):349-361 (1963-1964).

$$Z - 1 = \frac{(4 - 2\xi + \xi^2)\xi}{(1 - \xi)^3} = v\left(\frac{\partial}{\partial v} ln\ Q_p\right)_T = -\xi\left(\frac{d}{d\xi} ln\ Q_p\right)_T . \qquad \textbf{(A4)}$$

since

$$\frac{d\xi}{\xi} = -t\frac{dT}{T} - \frac{dv}{v} ;$$

thus,

$$\left(\frac{dv}{v}\right)_T = -\frac{d\xi}{\xi} .$$

Then integrating Eq. (A4):

$$\int_1^{Q_p} d\ ln\ Q_p = -\int_0^{\xi} \frac{4 - 2\xi + \xi^2}{(1 - \xi)^3}\, d\xi . \qquad \textbf{(A5)}$$

the results are

$$ln\ Q_p = ln\ (1 - \xi) - \frac{3}{2(1 - \xi)^2} + \frac{3}{2} \qquad \textbf{(A6)}$$

or

$$Q_p = (1 - \xi)e^{-3/2(1-\xi)^2+3/2} \qquad \textbf{(A7)}$$

The total partition function can now be obtained by multiplying Q_p by those factors associated with the other types of energy to be considered.

The contribution to the thermodynamic properties of a dense gas due to the potential energy between the molecules can now be obtained using the following statistical thermodynamic equations:

$$\frac{u_p}{RT} = \left(\frac{\partial\ ln\ Q_p}{\partial\ ln\ T}\right)_v = \mathcal{J}(Z - 1) , \qquad \textbf{(A8)}$$

where

$$\mathcal{J} = \frac{1}{4}\left[1 - \frac{G(x)}{\left(1 + \frac{F(x)}{12}\right)}\right]$$

and

$$G(x) = -x\frac{dF}{dx} ,$$

$$\frac{h_p}{RT} = \frac{u_p}{RT} + \left(\frac{pv}{RT} - 1\right) = (\mathcal{J} + 1)(Z - 1) , \qquad \textbf{(A9)}$$

$$\frac{s_p}{RT} = \frac{u_p}{RT} + ln\ Q_p = \mathcal{J}(Z - 1) - \frac{3}{2(1 - \xi)^2} + \frac{3}{2} + ln\ (1 - \xi) , \qquad \textbf{(A10)}$$

$$\frac{c_{v_p}}{R} = \frac{1}{R}\left(\frac{\partial u_p}{\partial T}\right)_v = \phi(Z-1)\left(1 + D\phi - \frac{\phi Z Z'}{Z-1}\right), \tag{A11}$$

where

$$D\phi = \frac{T}{\phi}\frac{d\phi}{dT}$$

and

$$Z' = \frac{\xi}{Z}\frac{dZ}{d\xi},$$

and

$$\frac{c_{p_p} - c_{v_p}}{R} = \frac{1}{R}\left[P + \left(\frac{\partial u}{\partial v}\right)_T\right]\left[\left(\frac{\partial v}{\partial T}\right)_p - \frac{R}{P}\right] = \frac{Z(1-\phi Z')^2}{1+Z'} - 1\,. \tag{A12}$$

Appendix B

GRAPHS OF SELECTED THERMODYNAMIC PROPERTIES OF HYDROGEN

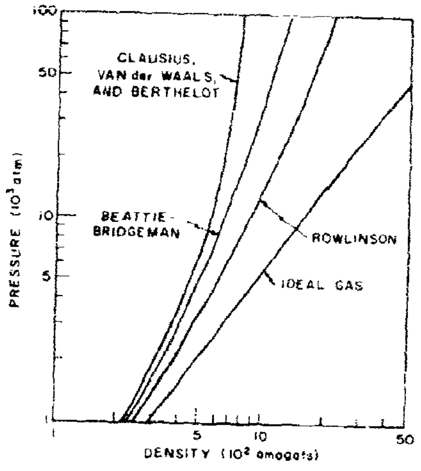

Fig. B1 - Comparison of Rowlinson equation of state with other well-known equations of state with initial gas state of 16 atm and 290°K

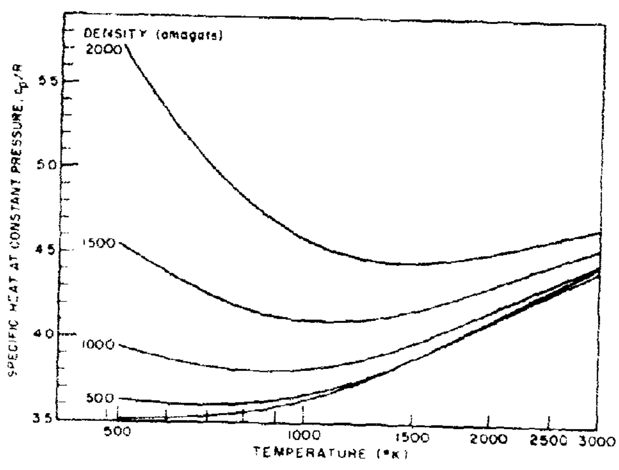

Fig. B2 - Specific heat at constant pressure vs temperature for constant density

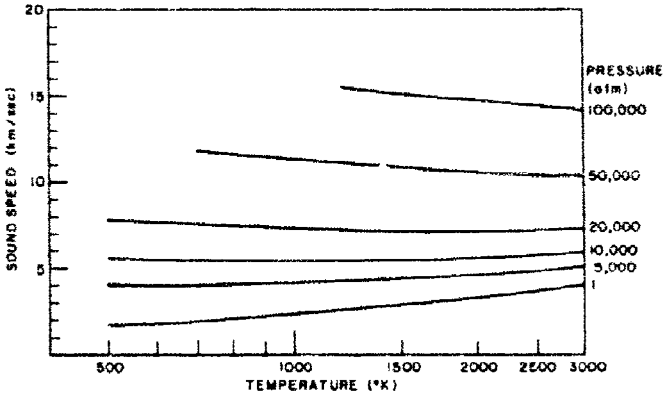

Fig. B3 - Sound speed vs temperature for constant pressure

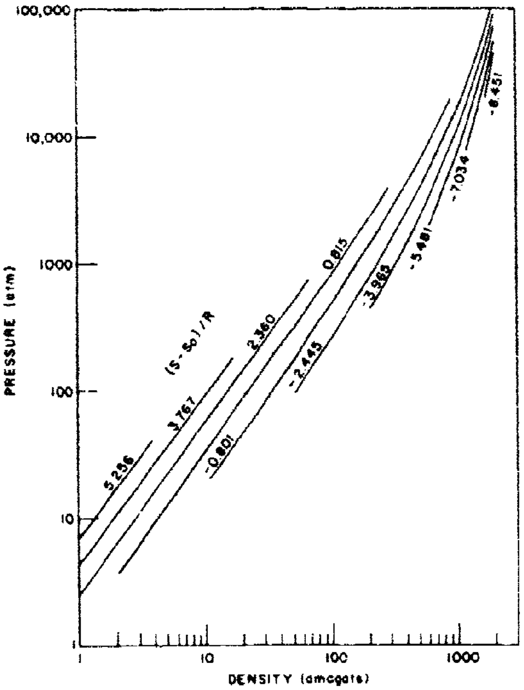

Fig. B4 - Pressure vs density for constant entropy

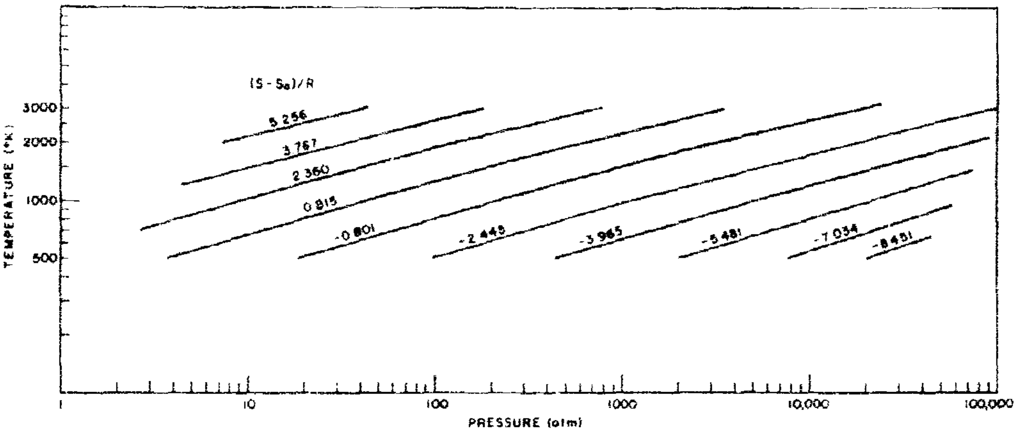

Fig. B5 - Temperature vs pressure for constant entropy

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13. ABSTRACT

The partition function corresponding to an equation of state for a high-temperature, high-density gas suggested by J. S. Rowlinson ~~has been~~ derived. The equations for selected thermodynamic properties of the gas are obtained from this partition function using statistical thermodynamics. These equations are used to calculate results for the case of hydrogen in the range of temperature between 500°K and 3000°K and in the range of density between 1 and 2000 amagats.

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